

Michigan's Proposed
2008 Lead National Ambient Air Quality Standard
Nonattainment State Implementation Plan
For (partial) Ionia County, City of Belding



Michigan Department of Environmental Quality
Air Quality Division

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ATTAINMENT DEMONSTRATION PLAN FOR THE LEAD NATIONAL AMBIENT AIR QUALITY STANDARD IN MICHIGAN

EXECUTIVE SUMMARY

The federal Clean Air Act Amendments of 1990 (CAA) require the United States Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for pollutants that impact public health and the environment, one of those pollutants being lead. The CAA also requires that the EPA periodically review standards and the latest scientific information to ensure they provide adequate health and environmental protection. The standards are updated as necessary.

On October 15, 2008, the EPA revised the lead NAAQS to provide increased protection from adverse health effects associated with exposure to lead. The standard went from 1.5 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) set in 1978, to a level of 0.15 $\mu\text{g}/\text{m}^3$. When the EPA establishes or revises a NAAQS, designations of attainment and nonattainment must be established for all regions of the United States.

In April 2010, source-oriented ambient air lead concentration data was obtained and assessed for an area in Belding, Michigan. This data indicated exceedances of the new standard. The source of the emissions was determined to be one facility, Mueller Industries. This led to a status of nonattainment for an area around the facility.

Per Section 191(a) of the CAA, the Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD) is required to submit to the EPA an attainment demonstration State Implementation Plan (SIP) for lead, and to demonstrate that the nonattainment area will reach attainment within five years from the date of the nonattainment designation.

The main purpose of the SIP revision is to address requirements described in the CAA Section 172(c) as they pertain to the nonattainment area. The document addresses reasonably available control technology and measures (RACT and RACM), reasonable further progress (RFP), enforceable emission limitations and all other changes made at the facility to reduce impacts, as well as data indicating what progress has been made to this point. Changes include raising the stack, enhancing the control system and monitoring, and better/more maintenance procedures.

The measures described and detailed in this document are enforceable by New Source Review (NSR) permit as well by a consent order. Also, the data indicates compliance with the standard for the past 15 months at both ambient air sites being monitored for lead. The steps taken and records indicate the facility should continue to be in compliance for the foreseeable future.

INTRODUCTION

1.0 Designation History

On October 15, 2008, the EPA revised the lead NAAQS to provide increased protection from adverse health effects associated with exposure to lead.

The primary lead NAAQS was strengthened by the EPA from 1.5 $\mu\text{g}/\text{m}^3$ set in 1978, to a level of 0.15 $\mu\text{g}/\text{m}^3$. The EPA also modified how attainment with this standard is determined. The averaging time was changed from a calendar quarterly average to a rolling 3-month average

period. In addition, the EPA strengthened the secondary lead standard to a level that is identical to the primary standard. In conjunction with changing the lead NAAQS, the EPA required an improved lead monitoring network with source-oriented monitors located near facilities emitting more than one ton per year (tpy) of lead and non-source-oriented monitors in urban areas with populations greater than 500,000 people. Later, the EPA decreased this threshold to 0.5 tpy; however, this change had no impact on Michigan's monitoring plan.

Section 107(d) of the CAA governs the process for area designations. Following the promulgation of a new or revised standard, the CAA requires the Governor to recommend initial designations of the attainment status for all areas of the state. Areas can be designated as "nonattainment" (does not meet, or contributes to a nearby area that does not meet the NAAQS), "attainment" (meets the NAAQS), or "unclassifiable" (cannot be classified based on available data).

On October 9, 2009, the AQD recommended that the counties of Wayne, Kent, Washtenaw, Genesee, and Missaukee be designated as attainment for the new lead NAAQS based on the most recent data from lead monitors in the state. The MDEQ recommended that the remainder of the state be considered unclassifiable.

In January 2010, additional source-oriented and population-oriented monitoring sites were established to comply with the new monitoring requirements. The source-oriented monitor in the city of Belding, east of Mueller Industries, indicated levels of lead exceeding the new lead standard. As a result, the MDEQ recommended a nonattainment designation for an area in Belding. The boundary of the nonattainment area is in the immediate vicinity of the lead-emitting source and is described in detail in this document. On November 8, 2011, the EPA designated this area to nonattainment status for lead. A SIP for lead nonattainment is due June 30, 2013.

2.0 Site Description

The nonattainment area is located in the central portion of the Lower Peninsula, northwest Ionia County, in the city of Belding. It is bounded by the geographic coordinates listed in Table 1 and depicted graphically in Figure 1, Figure 2, and Figure 3.

Figure 1
Map of Ionia County
Within State of Michigan

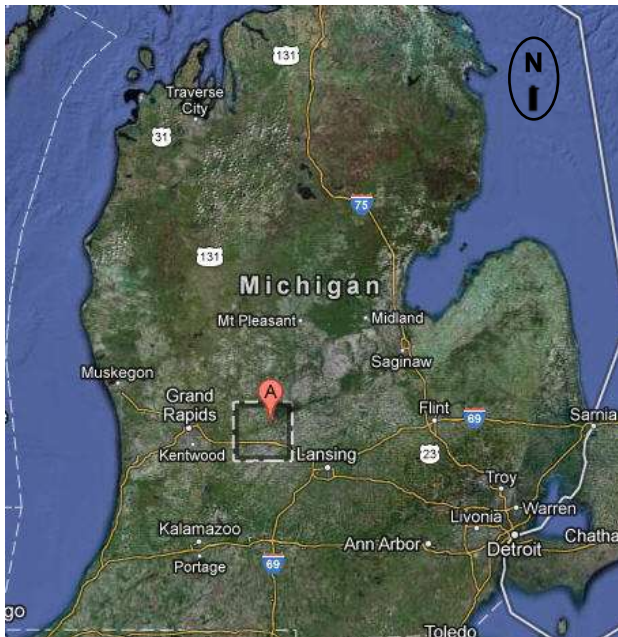


Figure 2
Map of Belding
Within Ionia County

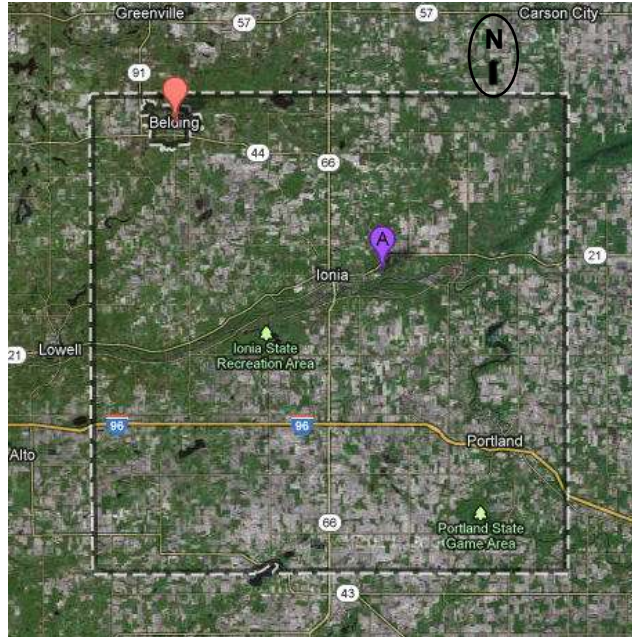


Figure 3
Map of Nonattainment Area
Within City of Belding

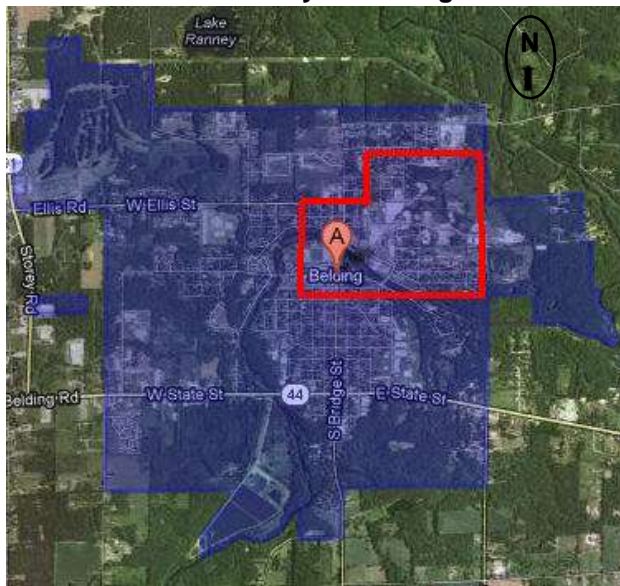


Figure 4
Map of Lead Nonattainment Area in Belding



Table 1
Geographic Coordinates of Lead Nonattainment Area in Belding, MI

Point Location	X_UTM16N	Y_UTM16N	X_Longitude	Y_Latitude
South East Corner	645424.57	4772988.55	-85.2130771	43.0956705
South West Corner	643850.91	4772995.77	-85.2324027	43.0960358
Ellis Ave Btw Ranny and 10th	643845.83	4773805.82	-85.2322553	43.1033277
Ellis Ave and Bridge Street	644204.45	4773820.43	-85.2278464	43.1033911
Ellis Ave and Earle Street	644184.69	4774270.74	-85.2279722	43.1074479
North East Corner	645384.03	4774301.35	-85.2132313	43.1074942

3.0 Lead Source Description

Lead is a component of the brass used at Mueller Industries. Lead is emitted during the brass rod manufacturing process. Processes that emit lead at Mueller Industries have MDEQ NSR air use permits that restrict emissions. Primary sources of lead emissions at Mueller Industries include the following:

- West Chip Dryer
- East Chip Dryer
- Induction Furnace No. 7
- Induction Furnace No. 8
- Induction Furnace No. 9

The West Chip Dryer is a rotary kiln that has a design capacity of 10 tons of brass chips per hour. The West Chip Dryer is currently the only chip dryer in operation at the facility. Air emissions from the chip dryer are controlled by a multi-clone unit followed by a thermal oxidizer and a pre-cooler/wet scrubber. In September 2010, the facility installed enhancements to the pre-cooler/ wet scrubber to increase its control efficiency. These enhancements include the installation of a new spray nozzle system as well as the addition of a demister unit. In January 2012, the stack of the West Chip Dryer was raised to 120 feet.

The East Chip Dryer is a rotary kiln that has a design capacity of 7.5 tons of brass chips per hour. The facility has not operated the East Chip Dryer since August 9, 2010. The facility has agreed to conduct compliance testing before restarting the dryer. Air emissions from the chip dryer are controlled by a multi-clone unit followed by a thermal oxidizer and a pre-cooler/wet scrubber. If restarted, Mueller Industries will complete similar enhancements on the East Chip Dryer control system. In addition, a maintenance plan similar to that used on the West Chip Dryer will be implemented. Finally, the stack height of the East Chip Dryer would be increased if restarted.

The facility has three electric induction furnaces for the melting of brass. The furnaces are identified as Furnace Nos. 7, 8 and 9. The furnaces are commonly controlled by two fabric filter collectors (East Baghouse: 60,000 cubic feet per minute [cfm], and West Baghouse: 60,000 cfm). The East Baghouse is preceded by a cyclone collector.

All units are now covered by NSR Permit No. 16-11, which is attached as Appendix A.3.

MAJOR ACTIONS

4.0 NAAQS Issues and Data Collection

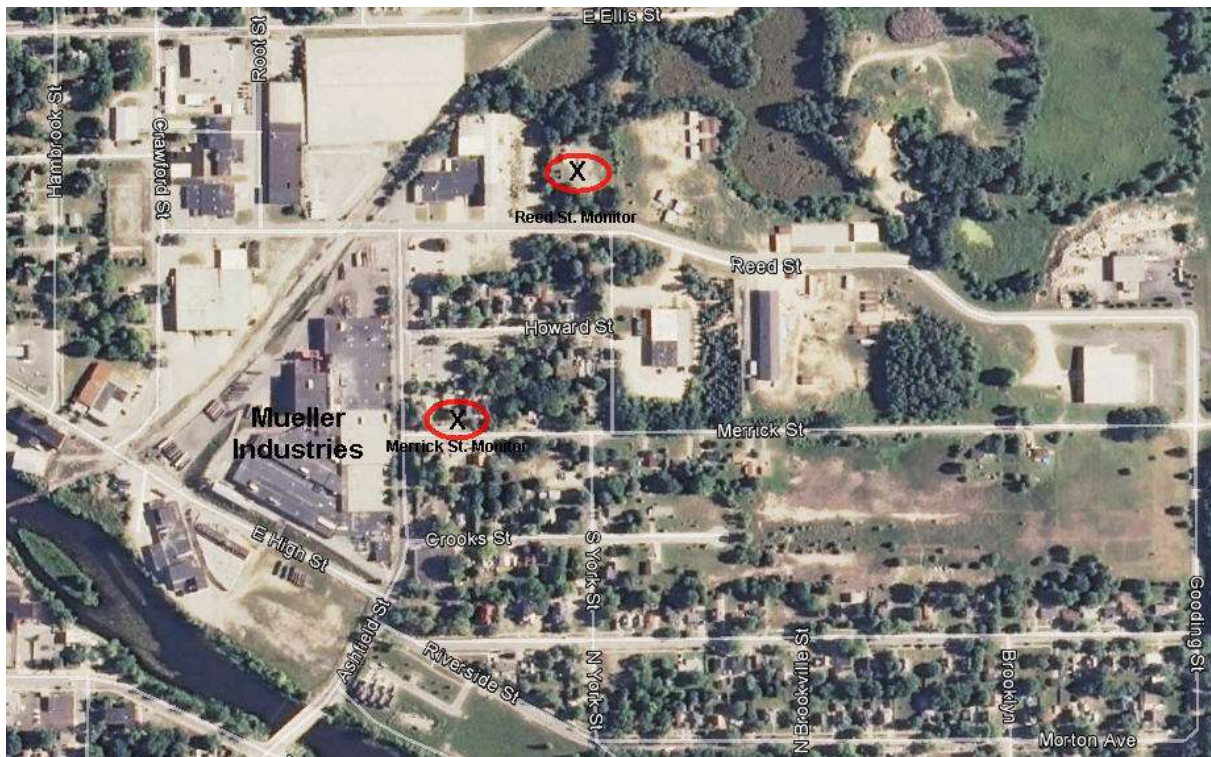
4.1 NAAQS and Mueller Industries

The federal lead regulations issued in November 2008 required states to determine if monitoring for airborne lead was necessary near sources emitting one ton or more per year (later modified to 0.5 tpy). Four facilities in Michigan were emitting lead at this level. Subsequent modeling predicted that the impact from Mueller Industries was greater than one-half the lead NAAQS. The predicted impact from the other three sources did not exceed this level. Lead monitoring in close proximity to Mueller Industries began in January 2010. A high volumetric filter-based monitor was installed approximately 60 yards to the east of the facility in a residential neighborhood (Figure 5). In this report, this unit is referred to as the “Merrick St.” site.

In January 2011, Mueller Industries submitted a state NSR permit application to make changes to the permit and facility that would improve capture and control of lead and make those changes federally enforceable. Among other improvements, it was decided to extend the height of the stack of the West Chip Dryer. If restarted, the East Chip Dryer stack would also be increased. As a result of modeling (see Figure 7), it was decided a second monitor should be placed in the area, indicated through modeling, to be the area of maximum impact of lead emissions. This was done to ensure compliance with the new lead standard. This location is referred to as the “Reed St.” site (see Figure 5), which became operational in July 2011.

Ambient air monitors detected levels of lead with a 3-month average as high as $0.28 \mu\text{g}/\text{m}^3$, which violated the new NAAQS set at $0.15 \mu\text{g}/\text{m}^3$ (Figure 6 and Table 2). The monitor data has been quality assured and submitted to the EPA’s Air Quality System. These events are what have led to the nonattainment designation.

Figure 5 – Location of Belding Monitor, Reed St. and Merrick St.



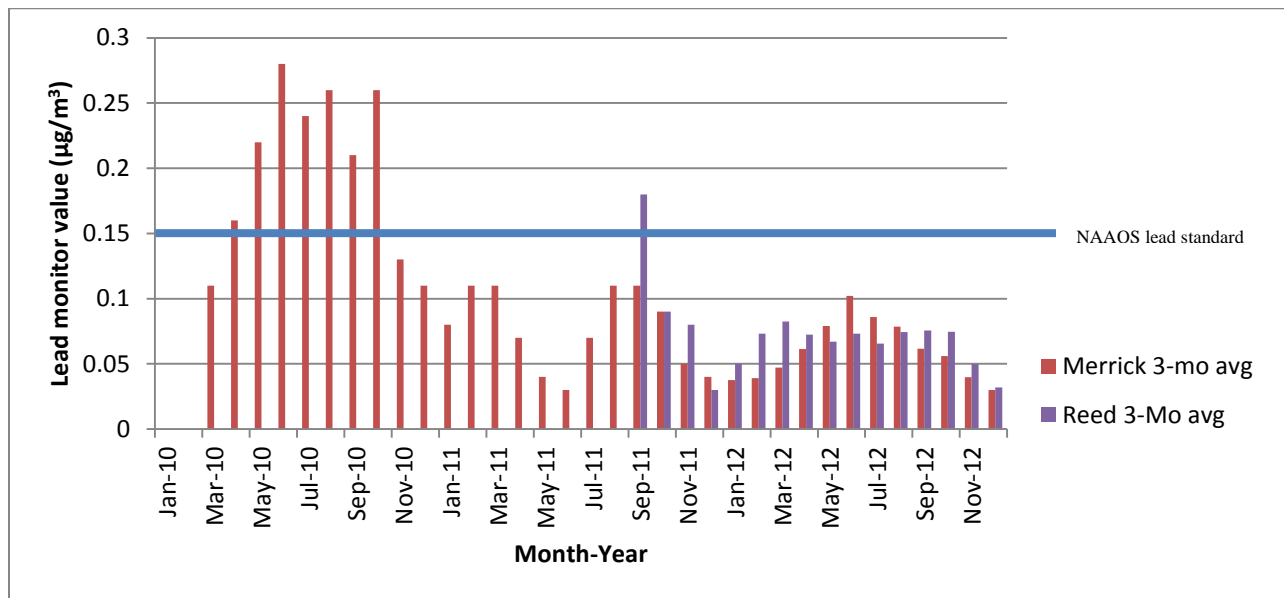
4.2 Monitoring Data

Lead concentration data was originally collected at the Merrick St. site, but has also been collected at the Reed St. location since July 2011. Monitoring per EPA requirements consists of data being collected once every six days. This data point is then used to create monthly averages. The raw data is attached in Appendix A.1, while the monthly average and 3-month rolling averages are in Table 2. A chart of the monitoring data and the standard are attached (Figure 6).

Table 2 — Lead Monitoring Data for Belding, Michigan Sites

Year	Month	Merrick St.		Reed St.		Events
		Monthly ($\mu\text{g}/\text{m}^3$)	3-Mnth Avg ($\mu\text{g}/\text{m}^3$)	Monthly ($\mu\text{g}/\text{m}^3$)	3-Mnth Avg ($\mu\text{g}/\text{m}^3$)	
2010	January	0.0935	---	---	---	Merrick Street monitor comes online
	February	0.2025	---	---	---	
	March	0.02368	0.11	---	---	
	April	0.2645	0.16	---	---	
	May	0.3609	0.22	---	---	
	June	0.2264	0.28	---	---	
	July	0.1368	0.24	---	---	
	August	0.4131	0.26	---	---	East Chip dryer shutdown
	September	0.07521	0.21	---	---	Upgrade of control equipment completed
	October	0.2934	0.26	---	---	
	November	0.01609	0.13	---	---	
	December	0.0345	0.11	---	---	
2011	January	0.1947	0.08	---	---	
	February	0.09663	0.11	---	---	
	March	0.04045	0.11	---	---	
	April	0.06084	0.07	---	---	
	May	0.01283	0.04	---	---	
	June	0.03049	0.03	---	---	
	July	0.1716	0.07	0.2987	---	Reed Street monitor comes online
	August	0.1276	0.11	0.0587	---	
	September	0.0389	0.11	0.1805	0.18	
	October	0.0915	0.09	0.0385	0.09	Soil remediation takes place
	November	0.0249	0.05	0.0169	0.08	
	December	0.0065	0.04	0.0203	0.03	PM/MAP implemented/received
2012	January	0.0363	0.02	0.053	0.03	Stack Height Rises to 122 ft
	February	0.02766	0.02	0.05834	0.04	
	March	0.02079	0.03	0.03699	0.05	
	April	0.06218	0.04	0.03488	0.04	
	May	0.05919	0.05	0.04893	0.04	
	June	0.06243	0.06	0.04813	0.04	
	July	0.03318	0.05	0.02104	0.04	
	August	0.04604	0.05	0.06473	0.04	
	September	0.03192	0.04	0.05056	0.05	
	October	0.02298	0.03	0.01916	0.04	
	November	0.01688	0.02	0.02020	0.03	
	December	0.01431	0.02	0.01808	0.02	

Figure 6 – Graph of Lead Monitoring Data (2010-2012) Belding, Michigan



5.0 Federally Enforceable Documents: Permit to Install 16-11 and Consent Order 9-2011

The Air Use Permit issued on October 20, 2011 is a federally enforceable document from Michigan’s New Source Review/Permit to Install program. Compliance with this document has been critical to the success of achieving NAAQS for lead, and will continue to be critical to maintaining impacts below those standards in the future. The following section describes in greater detail the permit conditions created specifically for the dominant lead source in the nonattainment area, Extruded Metals, Inc. Compliance with this document is further supported/reinforced by Consent Order No. 9-2011, which is attached as an appendix.

A small revision was made and issued on March 15, 2012. It simply reworded the timeframe in which the East Chip Dryer stack needed to be modified. Now the company needs to extend the stack to 122 feet before operation of the chip dryer begins, rather than within 150 days of the original permit issuance.

Copies of the revised PTI No. 16-11 and Consent Order 9-2011 are in Appendices A.3 and A.4, respectively.

5.1 Emission Limitations

Emission limitations in the permit cover multiple pollutants, including lead. The East and West Chip Dryers were each given their own specific lead mass emission rate limit (lbs/hr) in addition to a common concentration emission rate limit (mg/cfm). This short-term lead limit is enforceable with established stack testing procedures and requires that no emission “spikes” occur.

Other lead emission rates within the permit cover three induction melting furnaces. Again, they have several pollutant emission rates, including lead. Similar to the East and West Chip Dryers,

the East and West Baghouses have their own mass emission rate limits and a common concentration emission rate limit. The limits for these devices are a fraction of the limits for the chip dryers.

5.2 Material Limits

Material limits were not necessary for Extruded Metals.

5.3 Process/Operational Restrictions

Both the chip dryers and both the melt furnace baghouses are required by permit to submit a preventative maintenance/malfunction abatement plan (PM/MAP). The plan must detail the equipment, personnel responsible for equipment, inspection requirements, parameters that shall be monitored to detect malfunction, replacement part identification and inventory, as well as corrective procedures or operational changes that will be made in the event of a malfunction. This document has been submitted and is attached in Appendix A.2. The AQD can request changes to this document at any time.

The thermal oxidizer attached to each chip dryer is required to reach a minimum temperature of 1500 degrees F, and a minimum retention time of 0.5 seconds to allow for proper destruction of pollutants.

5.4 Design Equipment Parameters

A key component in achieving the lead NAAQS is proper control. PTI No. 16-11 contains permit conditions that require proper operation of the chip dryer thermal oxidizer, cyclones, precoolers/wet scrubber and demister as well as the melt furnace baghouses. The federally enforceable conditions require many parameters including temperature, water flow, pressure drop and others be established and adhered to.

At the current time, the East Chip Dryer is not operating, so the permit requires that all control systems must be equivalent or better than those on the West Chip Dryer before operation can begin.

5.5 Testing/Sampling

As part of the maintenance of the lead NAAQS, continued compliance is imperative. Therefore, PTI No. 16-11 requires testing to verify equipment is performing as expected. The permit requires that the East Chip Dryer exhaust be tested for multiple pollutants, including lead, within 90 days of starting up, and that both chip dryers be tested a minimum of every five years.

5.6 Monitoring/Recordkeeping

Monitoring and recordkeeping requirements are extensive in PTI No. 16-11, because of their importance in establishing continued compliance with the emission limits between stack tests.

In the chip dryers, monitoring and recordkeeping includes: temperature of the thermal oxidizer, nozzle water pressure for the precooler/scrubber system, water flow rate for the precooler/scrubber system, logs of PM/MAP activities, and continuous or once-a-shift records for each parameter, as appropriate.

The company is required to monitor and record pressure drop readings continuously for the baghouses servicing the melt furnaces when the furnaces are operating. Like the chip dryers, logs of PM/MAP activities must be kept.

5.7 Reporting

The facility must report to the AQD, in writing, seven days before starting up the East Chip Dryer. This will allow the AQD to better correlate the changes in impacts at the monitor, as well as track new monitoring, testing, etc.

5.8 Stack/Vent Restrictions

Stack requirements for both melt furnace baghouse stacks as well as the chip dryers are detailed in PTI No. 16-11. The stack heights of the chip dryers are critical to reaching and maintaining the lead NAAQS, according to modeling and recent monitoring data. As stated earlier, the East Chip Dryer currently does not have a properly designed stack, and is not in operation. Before the East Chip Dryer can be restarted, the permit requires the stack height be increased from its current height to 122 feet.

5.9 Other Requirements

Other requirements listed in PTI No. 16-11 include a stack height requirement for the West Chip Dryer that has already been met. The East Chip Dryer stack height must be compliant with the stack restriction special condition before commencing operation.

Also, the facility is required to comply with all provisions of 40 CFR 63, Subpart TTTTTT, the *National Emission Standards for Hazardous Air Pollutants for Secondary Nonferrous Metals Processing Area Sources*.

5.10 Consent Order 9-2011

Consent Order 9-2011 was signed by the AQD Chief on December 1, 2011. This document makes PTI No. 16-11 enforceable as part of the consent order. In addition, the lead, particulate matter and hydrogen chloride emission rates from the West Chip Dryer as described in PTI No. 16-11 are listed in the compliance program. Finally, the PM/MAP submittal and any changes, once approved, become an enforceable part of the consent order.

The consent order also details a settlement for past violations, as well as stipulated penalties for future violations of the order.

COMPONENTS OF NONATTAINMENT SIP REQUIRED BY CLEAN AIR ACT

Section 110 of the CAA delineates general SIP requirements while Section 172 of the CAA sets forth the nonattainment plan requirements. Section 110 was addressed by Michigan as part of its Lead Infrastructure SIP submittal on April 3, 2012. Components required in the Lead attainment plan include those listed in Section 6.0.

6.0 In General (as required by Section 172(c)(1))

The following information is presented as a description of the events leading to and the steps taken in the past several months to address lead compliance issues for both NSR permit and lead nonattainment issues.

6.1 Events Leading to and Actions Addressing Mueller Industries/NAAQS Standards

In November 2008, as part of a routine compliance evaluation, the MDEQ requested stack testing be performed at Extruded Metals in Belding. Coincidentally, near that same time, the EPA made States aware that facilities emitting more than one ton of lead would need site-specific monitoring to ensure compliance with new NAAQS. The MDEQ began investigating sources that might be subject to monitoring requirements; among them, Extruded Metals, later called Mueller Industries. The following timeline highlights events that have occurred since then:

October 2009	Areas of Michigan determined to be “unclassifiable” for lead SIP compliance. Source-specific monitoring required for lead sources emitting more than 1 tpy lead (later 0.5 tpy).
Nov/Dec 2009	Stack test indicating Mueller Industries (formerly Extruded Metals) in Belding is not meeting permitted lead emission limits; citation issued for PTI No. 505-93 (West Chip Dryer).
January 2010	Collection of ambient air lead concentration data begins at the Merrick St. site in Belding.
April 2010	Merrick St. lead data indicates 3-month average is above the NAAQS.
August 2010	Mueller Industries discontinues operations of the East Chip Dryer and agrees not to restart the dryer unless an upgraded control system is installed, the stack height is raised, and emission testing is conducted to verify compliance with applicable emission limits.
September 2010	Mueller Industries completes installation of an enhanced scrubber system on the West Chip Dryer to reduce air emissions.
October 2010	Last noncompliant (w/ NAAQS) 3-month rolling average value taken at Merrick St. monitor. Stack test conducted showing West Chip Dryer compliant with lead permit limit.
November 2010	Stack test indicating compliance with lead permit limit for three melt furnaces controlled by the East and West Baghouses.
January 2011	Application received from Mueller Industries that is alleged to be compliant with the NAAQS.
July 2011	Collection of ambient air lead concentration data begins at Reed St. site in Belding.
Sept 2011	Obtained 3-month rolling average data point indicating that the Reed St. monitor is noncompliant with the NAAQS.

October 2011	PTI No. 16-11 issued, which limits lead emissions, requires a PM/MAP within 60 days, requires additional controls, limits operation of East Chip Dryer, and increases monitoring and recordkeeping of operations and controls. Lead remediation of soil near the facility is completed.
November 2011	Belding area officially designated as nonattainment.
December 2011	PM/MAP as required by PTI No. 16-11 is submitted and implemented.
January 2012	New stack installed on the West Chip Dryer process, increasing the height to 122 feet as required in PTI No. 16-11.

6.2 Reasonable Available Control Measures (RACM)

The actions taken to reduce lead emissions were performed as the result of both NSR permit and NAAQS noncompliance. By taking steps to improve the effectiveness of the existing controls, Mueller Industries was able to prove via stack testing that they were able to meet permit limits for lead, which were established using modeling with NAAQS as the basis. The improvements include adding a demister, reconfiguring and improving the spray nozzle system in the scrubber, and improving monitoring techniques to more consistently maintain the quality of these controls.

In addition, a potential source of lead was greatly reduced by removing contaminated soil and establishing plant growth on remediated areas. Lead contaminated soil was found in an area of the facility and removed, thereby reducing the potential for re-entrainment of pollutants. As part of the remediation, new soil was reapplied and ground cover was established. This is an effective way to reduce contamination re-entrainment from any lead that was not captured as part of the soil removal.

The control system in place at the time (cyclone, thermal oxidizer and scrubber) was thought to be capable of properly controlling emissions. The cost to either remove this control system and replace it with another or add control devices to the existing system was prohibitive and determined to be unnecessary to meet permit limits. According to modeling results, if the company could meet their permitted limits, raising the stack would allow them to meet the NAAQS for lead. Enhancements were made to the existing control system to ensure its ability to meet permit limits. Testing confirms that the enhanced control system has been effective in reducing lead emissions contributing to the NAAQS violations.

7.0 Reasonable Further Progress (as required by Section 172(c)(2))

7.1 Progress Made

The MDEQ and Mueller Industries have taken several steps that appear to have already succeeded in bringing lead values into a range that is expected to be compliant with the lead NAAQS of $0.15 \mu\text{g}/\text{m}^3$ as determined on a 3-month rolling average. In addition, continued maintenance as described in the approved preventative maintenance plan will ensure this compliance/emission rate is maintained and yet allows for changes that are found to be improvements in any of the parameters or data collection methods. This allows Mueller to make changes that show continued improvement in lead emission rates. Maintenance of the compliant levels will be ensured by MDEQ inspections, stack tests as needed and/or required,

recordkeeping, preventative maintenance, etc. It is believed that 15 months of compliance is a good indication progress is being made and maintenance of that progress is reasonable.

7.2 Quantifying Anticipated Allowable Impacts

As illustrated in Table 2 and Figure 6, Michigan is achieving success in meeting NAAQS for the nonattainment area. Ambient air monitoring data indicates the standard of $0.15 \mu\text{g}/\text{m}^3$ is being met by a considerable margin. Using the EPA's air dispersion modeling software AERMOD (discussed more completely in Section 7.11), it was determined that as long as permitted emission limits are being met, the NAAQS can be met. However, the current monitoring data reflects the impacts of activities currently conducted at the facility, not necessarily as great as the level allowed by the permit to install. At this time, the East Chip Dryer has been shut down. Before it can resume operation, the control systems would need to be enhanced, the stack would need to be raised, preventative maintenance plans would need to be implemented, and stack testing would need to be performed. At that point, an additional 0.2 lbs/hr of lead could be released into the area. To estimate the potential impact of this additional allowable source, the MDEQ has chosen to increase recorded impacts by two-thirds. This assumption is based on the conservative estimate that the West Chip Dryer, with an allowed emission rate of 0.3 lbs/hr, is solely responsible for the impacts at the monitors, and that the impact concentration caused by each stack would occur at the same point and day. The following table uses the MDEQ acquired monitoring data to extrapolate impacts using these assumptions since most of the relevant modifications took effect.

Table 3 – Calculated Potential Impacts Based on Monitoring Data

Year	Month	Merrick St.			Reed St.		
		Original Monthly ($\mu\text{g}/\text{m}^3$)	Extrapolated Monthly ($\mu\text{g}/\text{m}^3$)	Extrapolated 3-Mnth Avg ($\mu\text{g}/\text{m}^3$)	Original Monthly ($\mu\text{g}/\text{m}^3$)	Extrapolated Monthly ($\mu\text{g}/\text{m}^3$)	Extrapolated 3-Mnth Avg ($\mu\text{g}/\text{m}^3$)
2012	Jan.	0.036	0.061	0.038	0.053	0.088	0.050
	Feb.	0.028	0.046	0.039	0.058	0.097	0.073
	March	0.021	0.035	0.047	0.037	0.062	0.082
	April	0.062	0.104	0.061	0.035	0.058	0.072
	May	0.059	0.099	0.079	0.049	0.082	0.067
	June	0.062	0.104	0.102	0.048	0.080	0.073
	July	0.033	0.055	0.086	0.021	0.035	0.066
	August	0.046	0.077	0.079	0.065	0.108	0.074
	Sept.	0.032	0.053	0.062	0.051	0.084	0.076
	Oct.	0.023	0.038	0.056	0.019	0.032	0.075
	Nov.	0.017	0.028	0.040	0.020	0.034	0.050
	Dec.	0.014	0.024	0.030	0.018	0.030	0.032

As Table 3 shows, the highest anticipated impact is $0.102 \mu\text{g}/\text{m}^3$ given these assumptions, which is below the modeled maximum impact and still well within the $0.15 \mu\text{g}/\text{m}^3$ standard. In fact, extrapolated impacts appear low enough to leave room for additional emissions in case the current lead emissions are not always at their maximum allowed by PTI No. 16-11.

8.0 Inventory (as required by CAA Section 172(c)(3))

The lead component of the emission inventory for the nonattainment area consisted of only the single source, but other sources in the county have been included for completeness. Nonpoint and mobile sources were small, numerous and/or not quantifiable given the data available, and so are not included.

The MDEQ compiles air emission inventories to meet federal reporting requirements and to support other functions of the air program, including inventories used in SIP development and implementation. This inventory includes emissions from industrial sources across Michigan. The MDEQ's 2006-2011 emissions inventory for Ionia County shows three stationary sources reporting lead emissions in the county (Table 4). Mueller Industries, formerly Extruded Metals, reported 1403 pounds (lbs) of lead emissions in 2011. Ventra Ionia Main, LLC, formerly Meridian Automotive Systems, reported emissions of 0.040 lbs in each year. Historically, Riverside Correctional Facility has emitted lead but has ceased operation of the lead emission source after 2006.

As part of the Natural Resource and Environmental Protection Act, Act 451 of 1994 (NREPA), specifically Michigan Air Pollution Control Rule R336.202, facilities emitting over 0.6 tons per calendar year are required to report emissions annually to the Michigan Air Emissions Reporting System (MAERS). Facilities are encouraged to enroll in the program if they even suspect they might exceed this threshold. Other reasons facilities may have to report usually are the result of being subject to other federal regulatory programs such as Title V, Prevention of Significant Deterioration (PSD), National Emissions Standards for Hazardous Air Pollutants (NESHAP), New Source Performance Standards (NSPS) or others.

Table 4
2006-2011 Lead Emissions Inventory for Ionia County, MI

SRN	Facility	City	Address	Year	Reported (lbs)
B1650	Mueller Industries	BELDING	302 ASHFIELD	2006	2053
B1650	Mueller Industries	BELDING	302 ASHFIELD	2007	1754
B1650	Mueller Industries	BELDING	302 ASHFIELD	2008	1685
B1650	Mueller Industries	BELDING	302 ASHFIELD	2009	2277
B1650	Mueller Industries	BELDING	302 ASHFIELD	2010	1606
B1650	Mueller Industries	BELDING	302 ASHFIELD	2011	1403
K2120	Riverside Correctional Facility	IONIA	777 W RIVERSIDE DR	2006	42
N0923	Ventra Ionia Main, LLC	IONIA	14 N BEARDSLEY RD	2006	0.04
N0923	Ventra Ionia Main, LLC	IONIA	14 N BEARDSLEY RD	2007	0.04
N0923	Ventra Ionia Main, LLC	IONIA	14 N BEARDSLEY RD	2008	0.04
N0923	Ventra Ionia Main, LLC	IONIA	14 N BEARDSLEY RD	2009	0.04
N0923	Ventra Ionia Main, LLC	IONIA	14 N BEARDSLEY RD	2010	0.04
N0923	Ventra Ionia Main, LLC	IONIA	14 N BEARDSLEY RD	2011	0.05

9.0 Identification and Quantification (as required by CAA Section 172(c)(4))

For any facility subject to Michigan's NSR permitting program, all lead emissions shall be identified and quantified from sources allowed to emit within the nonattainment area, as well as the county in which the nonattainment area sits. As discussed above in Section 2.3, NREPA requires quantification and identification of pollutants, including lead, to be reported on an annual basis. Any additional sources of lead at Mueller Industries will have to report lead emissions at any level, assuming the Standard Classification Code for that activity has been determined to have lead emissions. Any other sources in the nonattainment area will be required to report lead emissions from a permit-subject emission unit if the stationary source emits more than 1200 lbs. lead annually.

10.0 Permits for New and Modified Major Stationary Sources (as required by CAA Section 172(c)(5))

All new major sources or modified major stationary sources are required to obtain a permit for the construction and operation of a lead source anywhere within the nonattainment area. In all areas of Michigan, NREPA, specifically Rule 201, requires that an air emission source of lead obtain a new source review PTI. The exception to this is under the Part 2 rule exemptions, which allow installation of some types of limited emissions equipment without a permit, as long as the installation can pass the Rule 278 “tests.” These tests include whether or not the proposed installations of equipment or changes in processes exceed emissions of 0.6 tpy lead, are major sources, are subject to PSD, or are 40 CFR 61, and/or 40 CFR 63 subject. If the Rule 278 test is not passed for one of these reasons, the facility is not eligible to use an exemption and will be required to obtain a PTI.

11.0 Other Measures (as required by CAA Section 172(c)(6))

The only lead source in the nonattainment area, Mueller Industries, has taken several steps to reduce lead emissions.

11.1 Consent Order

The facility entered into a consent order (Appendix A.4, AQD No. 9-2011) in which it was required to obtain a revised permit to install. Other requirements of the consent order reinforce aspects of the permit to install. The consent order also required a penalty amount to be paid for a past violation. In addition, violation of any of the permit conditions described in the revised permit to install can result in additional financial penalties.

11.2 Permit to Install (PTI) No. 16-11

Requirements of the PTI (see Appendix A.3, PTI No. 16-11), issued on October 20, 2011, include the following:

- Restrictions on lead emissions from the East and West Chip Dryers.
- A PM/MAP (Appendix A.2).
- Requirements to have a properly operating “enhanced control” system including a thermal oxidizer cyclone, precoolers/wet scrubber and demister for each chip dryer when operating.
- Increased monitoring and recordkeeping of process/control device parameters; this includes pressure drop, water flow, and temperature gauges.
- Stack testing of the chip dryer stacks every five years.
- Increased stack height of chip dryer.
- Restrictions on lead emissions from the three melt furnaces.
- Requirements to have a properly operating baghouse system for the melt furnaces.

The permit conditions were also discussed in Section 5.0.

11.3 Soil Remediation

Mueller Industries and the MDEQ’s Remediation Division removed 436 tons of soil from more than 53 properties surrounding the facility in October 2011 in an attempt to remove lead from

the area. Once complete, the disturbed areas were replanted with vegetation to minimize any re-entrainment of past lead deposition. During the excavation, air quality was monitored to ensure no re-entrainment occurred due to the remediation. Although lead was found in quantifiable concentrations in soil samples, no estimate of total lead was performed. Also, no attempts were made to quantify what, if any, impacts this lead had on monitoring values.

12.0 Compliance with CAA Section 110(a)(2) (as required by CAA Section 172(c)(7))

Each implementation plan by the State of Michigan is adopted by the State after reasonable public notice.

12.1 Include Limits Controls, Schedules, etc. (CAA Section 110(a)(2)(A))

Enforceable emission limitations and other control measures and their means are described in PTI No. 16-11 (Attachment A.3) and are described above. Since being fully implemented, the permit has addressed many compliance issues, including lead standards. Compliance must be maintained with monitoring, recordkeeping and testing as detailed in PTI No. 16-11. A consent order (Attachment A.4) reinforces the requirement to implement and maintain the requirements in PTI No. 16-11 and provides for penalties if these requirements are not met.

12.2 Data Collection (CAA Section 110(a)(2)(B))

The following data is being collected to determine/assure continued compliance with the NAAQS.

The MDEQ operates, as described above, two monitoring sites in Belding. Filters are exposed at each monitoring site for 24 hours every six days to determine the average daily ambient lead concentration. These daily concentrations are averaged per calendar month. Three calendar month values are then averaged to determine the number that will be compared to the NAAQS. This method of determining a 3-month rolling average is consistent with EPA standards.

Mueller Industries is responsible for collecting data to demonstrate it is properly operating and maintaining its control equipment. The data required includes the thermal oxidizer temperature and the scrubber system water nozzle pressure and flow rate for the chip dryers and the baghouse pressure drop for the melt furnaces. The facility must also record maintenance and malfunctions according to its PM/MAP. The data can be requested at any time by the MDEQ.

12.3 Enforcement and Future Permitting (CAA Section 110(a)(2)(C))

Regular inspections will ensure that the terms of the permit and consent order are adhered to. Violations of the permit and/or consent order could result in enforcement actions. The MDEQ NSR program will ensure that new emission sources in the area will not threaten compliance with the NAAQS within the nonattainment area. Ambient air monitoring will confirm continued compliance.

12.4 Effects on Other States (CAA Section 110(a)(2)(D))

Given the size and location of the facility, the quantity of emissions, and modeling results that indicate a maximum impact relatively close to the facility, no significant impact on other states is expected.

12.5 State Authority (CAA Section 110(a)(2)(E))

The MDEQ has adequate personnel, funding and authority to carry out the implementation plan. Given recent concentration levels found at the monitors, most state resources will consist of monitoring lead concentrations at the two sites, and periodic inspections to verify permit compliance. The MDEQ has not relied on local or regional government for plan implementation and thus does not need additional measures to ensure their cooperation.

12.6 Require Additional Equipment/Reports (CAA Section 110(a)(2)(F))

As described previously, the NSR permit required, among other things, a new stack, new stack testing, new maintenance procedures, new parameter monitoring and new recordkeeping. These additional requirements were added as a result of the facility's role in the NAAQS nonattainment. The facility is subject to reporting, and has been doing so for several years. The records are available by requesting them through the Freedom of Information Act.

12.7 Imminent and Substantial Danger (CAA Section 110(a)(2)(G))

Upon receipt of evidence that a pollution source or combination of sources is presenting an imminent and substantial endangerment to public health or welfare, or the environment, the MDEQ has the authority under Part 55, Air Pollution Control, of NREPA, Rule 324.5518 to bring suit immediately or to take such other action as may be necessary.

12.8 Plan Revision (CAA Section 110(a)(2)(H))

If the plan is found to be insufficient and the MDEQ cannot achieve lead concentrations that are compliant with NAAQS, the MDEQ has the authority and will take action to revise, re-notice and enforce a modified plan that is capable of meeting the standards set forth. The MDEQ has authority to submit this plan under NREPA.

12.9 Nonattainment Plan (CAA Section 110(a)(2)(I))

The plan for dealing with nonattainment of NAAQS for lead is contained herein.

12.10 Consultation, Public Notification and PSD (CAA Section 110(a)(2)(J))

12.10.1 Consultation

The State of Michigan encourages consultation with all governmental agencies, local or regional governments, or government council. Public meetings held regarding this issue included local government officials. In addition, throughout clean-up efforts (soil remediation) and other activities addressing nonattainment, local government officials were kept informed. The MDEQ will continue this communication going forward.

12.10.2 Public Notification

During the public hearing process, all interested parties will have the ability to inquire about the plan, its contents and its status. Many public meetings have already been held in 2010 regarding the issues in Belding (see the MDEQ website for all information regarding the Belding/Ionia County attainment issues, as well as meeting dates, times and materials presented at <http://www.michigan.gov/deq/0,4561,7-135-3310-244345--,00.html>). Public

notification for SIPs is administered through our website. MDEQ public participation procedures require that we notify the public and other interested parties of the planned public hearing and comment period 30 days prior to holding a hearing for the SIP revision, as follows:

- Notice of availability of the attainment document will be posted on the MDEQ website on May 6, 2013.
- The public hearing to receive comments on the demonstration will be held if requested.
- Notification of the public hearing and solicitation for public comment for the attainment demonstration will be posted on the MDEQ's website on May 6, 2013.

12.10.3 PSD and Visibility

PSD and visibility will be addressed with our NSR permitting process with regards to facilities in the nonattainment area. PSD and visibility are also addressed by rule in Part 3 and Part 18 of Part 55, Air Pollution Control, NREPA.

12.11 Modeling (CAA Section 110(a)(2)(K))

To determine if emission rates proposed by the facility could meet NAAQS for lead, air dispersion modeling was performed. This modeling showed that, if the facility is able to meet their emission limits, standards could be met, but that it would require a stack height increase. According to the modeling, the maximum impact (with background added) would be $0.13 \mu\text{g}/\text{m}^3$. The area of maximum impact would be different due to this change in stack height, which is why a second monitor was sited. Data regarding this model is available and results are attached (Figure 7). More information about the MDEQ modeling process is available at http://www.michigan.gov/deq/0,4561,7-135-3310_30151_4198---,00.html

12.11.1 Modeling Software

The modeling software used by the MDEQ is recommended by the EPA for dispersion modeling and is AMS/EPA Regulatory Model (AERMOD). Version 11103 was used to model Mueller Industries at the time of the permit process. In addition, the use of pre-processors is necessary to create data that can be used by AERMOD to predict ambient impacts. AERMAP is used to prepare terrain data for elevations and features that could influence dispersion. Also, AERMET was used to prepare meteorological data and Building Profile Input Program with plume rise model enhancements was used to calculate turbulent wake effects caused by structures/buildings. Finally, as AERMOD does not support the rolling 3-month average calculations needed to compare the NAAQS, the EPA's post-processing tool, LEADPOST, was used to calculate the maximum impact concentration using monthly AERMOD outputs.

12.11.2 Modeling Inputs

A variety of inputs are necessary for dispersion modeling to be completed. These are the major data inputs used to model the Mueller Industries emissions.

- Terrain – The option of assuming that terrain might impact dispersion is available in AERMOD. As discussed above, a pre-processor is available that enables the user to input topographical data so each receptor point, source, building, etc. can be assigned a height with respect to sea level. This option was utilized in Mueller Industries modeling.

- Meteorology – For AERMOD to work properly, meteorological information is necessary. As previously mentioned, a preprocessor is used to format the data. In this case, surface meteorological data from the Grand Rapids airport was used as input, while upper air data from the White Lake National Weather Service station was utilized. A 5-year data set was used covering 2005 through 2009.
- Receptors – Receptor points, points at which pollutant concentrations are determined, were placed in accordance with the EPA's "40 CFR Part 51 Appendix W" guidance to use spacing that will adequately "estimate the highest concentrations and possible violations of a NAAQS or a PSD increment." As is MDEQ procedure, this modeling used 50-meter spacing in the neighborhood around the facility, 25-meter spacing at the fence line, and 100-meter spacing approximately one kilometer from the facility.
- Sources – Four sources of lead were included in the model, the East and West Chip Dryers and the melt furnaces that are controlled by the East and West Baghouses. Parameters are detailed in Appendix A.6.
- Background – As lead occurs naturally and would not be compensated for in the model otherwise, an additional concentration must be added to the modeled results to show the cumulative concentration of lead at an impact point. A back-ground value of $0.01 \mu\text{g}/\text{m}^3$ was used. This value was determined using data from the nearest monitoring station in Grand Rapids, Michigan.
- Land Use – AERMOD allows land to be characterized as "urban" or "rural" to allow for variations in dispersion that occur due to the "urban heat island effect." Belding is not large enough to exhibit this phenomenon, therefore a setting of rural was used.
- Downwash/GEP – When modeling was first performed for the facility, stacks that were higher than "GEP" (Good Engineering Practice) were not affected by building downwash effects; however, before the permit was issued, AERMOD was updated to include building downwash effects in GEP-sized stacks.

12.11.3 Modeling Results

The results for the modeling showed that the maximum concentration was $0.133 \mu\text{g}/\text{m}^3$. The following map depicts the results graphically.

Figure 7
MUELLER INDUSTRIES - Bedding, MI
(3-Month Rolling Average (2005-2009) - Lead Impacts)



The numerical results are included in Table 5

Table 5: Source Impact Data and Threshold Analysis
 (Impacts based on AERMOD version 11103 using 2005-2009
 Grand Rapids surface meteorology data)
 August 1, 2011

NAAQS ANALYSIS										
Pollutant	Combined Emission Rate		Averaging Period	NAAQS Threshold (µg/m³)	Ambient Impacts			Total Impact (µg/m³)	Percent of NAAQS Threshold	Pass/Fail?
	(lb/hr)	(g/s)			Facility (µg/m³)	Offsite Source (µg/m³)	Background (µg/m³)			
Lead	0.530	6.68E-02	3-month	0.15	0.123		0.01	0.133	88.7%	Pass

Maximum impact comprised of highest 3-month average impact from 2005-2009 meteorology data.

12.12 Fees (CAA Section 110(a)(2)(L))

Mueller Industries is not a major source. It is not subject to the requirements of Section 111 of Part A of Title I of the CAA (facilities that are subject to the federal NSPS). Finally, it is not an area source (i.e., not a major source defined under Section 112) that is subject to any NESHAP) regulations promulgated under Section 112 of the CAA. For these reasons, the MDEQ does not require Mueller to pay annual emission fees. Fines have been levied against Mueller Industries for the original violations. In addition, the consent order addresses fines for future violations.

12.13 Local Authorities (CAA Section 110(a)(2)(M))

Local township, village and county officials are encouraged to participate and have access to all relevant materials. However, they are not directly involved in development of the attainment plan.

13.0 **Equivalent Techniques (as required by CAA Section 172(c)(8))**

Modeling performed as part of PTI No. 16-11 indicates the emission limits established in the permit will ensure compliance with the NAAQS. A monitor was added in the area of expected maximum impact to assess steps taken by the facility to come into compliance with all standards. The emission inventory uses sufficient details of activities and pollutants from the nonattainment and surrounding area. Procedures used for planning are also adequate. At this time, the use of equivalent techniques is not anticipated.

14.0 **Contingency Measures (as required by CAA Section 172(c)(9))**

This plan must provide for the implementation of specific measures to be taken if the area fails to make reasonable further progress, or to attain the NAAQS by the attainment date. As this facility has already made the necessary progress and is currently meeting the NAAQS, contingency measures must focus more on assuring the current state of control is maintained. The facility will be expected to maintain all control devices as required by permit and keep all records of production and calculations of emissions. Inspections by the MDEQ, reporting, monitoring, and testing will be used to determine that control efficiencies are being met. However, if these steps do not allow the NAAQS for lead to be met, several actions will be considered and implemented as appropriate to reduce impacts to levels that are acceptable. These actions include assessing ways compliance with current requirements are performed, discuss additional modifications to existing systems and equipment, seeking additional sources of lead, and finally, changing control systems.

14.1 Increased Inspection Frequency, Improvement of PM/MAP, Stack Test

If the violations of the NAAQS occur in the future, an assessment of the operation and maintenance of the control devices will be conducted by the MDEQ. Inspections will take place to evaluate operation of the control equipment and the execution of PM/MAP procedures. If any are found to be deficient, the PM/MAP will be considered unapprovable, and modification will be required. An additional action that may be considered would be to require stack testing to determine that emission limits are being met if there is any evidence they are not. Based on emission reduction potential, cost effectiveness, length of implementation and economic impacts, the MDEQ will consider all aspects of the PM/MAP and select priorities accordingly.

14.2 Voluntary/Negotiated Modifications

The MDEQ may initiate a requirement for increased lead emissions control through a consent order or voluntary permit modification. These changes might include additional requirements or equipment to the existing control system, possibly for capture, control and/or monitoring. Limitations of production throughput or type or hours of operation will also be considered.

14.3 Seek Additional Sources of Emissions from Site

Investigation of possible additional sources and fugitive emissions will also be conducted if warranted. If the MDEQ assesses the maintenance and operation of the control devices and do not find issues, or suspect any issues found do not account for exceedances of the NAAQS, we will, together with company representatives, investigate the possibility of any additional sources of lead emissions. If any are found, they will be addressed appropriately. A component of this investigation into additional sources will be specifically aimed at determining what role fugitives play in lead emissions/impacts. At this time, it is thought that fugitive sources of lead are relatively minor, but if unexplained lead emissions are measured, this would be a reasonable assumption to investigate. Again, the MDEQ will prioritize implementing changes based on emission reduction potential, cost effectiveness, length of implementation and economic impacts.

14.4 Negotiate with Facility to Add/Change Control

As a final option, the MDEQ will enter into discussions with the company to improve or change the control system. Baghouses and wet electrostatic precipitators would be evaluated for cost and effectiveness.

Because it is not possible at this time to determine which of the above measures will be appropriate at some future date, measures discussed here are not complete and comprehensive. The MDEQ will solicit input from all interested and affected parties. No significant contingency measure will be implemented without providing the opportunity for public participation.

CONCLUSION

The preceding document describes in detail the events that led to the lead nonattainment status in Belding, Michigan, all steps that have been taken to reduce lead emissions in the area, and all evidence that those steps are working. The MDEQ respectfully submits this information as well as a description of our authority to enforce the commitments we have from the facility most likely causing a violation of the standard. Finally, this document provides details and commitments for actions to be taken in the event the standard is once again exceeded.

Appendices

A.1 Monitoring Data

- A.1.1 Raw data from lead monitor – Merrick St.
- A.1.2 Raw data from lead monitor – Reed St.

A.2 PM/MAP

- A.2. PM/MAP submitted by facility

A.3 Permit to Install

- A.3.1 PTI No. 16-11
- A.3.2 PTI Evaluation Form

A.4 Consent Order

- A.4. Consent Order 9-2011

A.5 Public Notice Documents

- A.5.1 Public Participation Documents for 16-11
- A.5.2 Extruded Metals – Response to Comments
- A.5.3 Public Hearing Notice for PTI No. 16-11 and Consent Order 9-2011
- A.5.4 Letter to Public for PTI No. 16-11 and Consent Order 9-2011
- A.5.5 SIP Public Participation Documents - to be added

A.6 Modeling

- A.6. Source parameters

A.7 Completeness Checklist

- A.7. Components of Plan Submissions required by 40 CFR Part 51, Appendix V
 - A.7.1. Administrative materials
 - A.7.2. Technical support

Appendix 1

Monitoring Data

A.1.1 Raw data from lead monitor – Merrick St.

A.1.2 Raw data from lead monitor – Reed St.

Summary of 24-Hr Lead Levels At Merrick St, Belding

Updated 3/11/13

AIRS ID = 260670003

* Expressed to four significant figures using truncation at local conditions.

** NAAQS = 0.15 ug/m3 as a rolling 3 month average.

*** WD's shown if wind is from 1 direction for 5hr or more. Otherwise, see Belding Met Summary Sheet

Dryer Operational

	Avg WS, mph	WD***	24-Hr Lead Value*, ug/m3	NAAQS**	Monthly Avg	3 Mo avg	West	East	Total Dryers Operational	Comments
1/2/10		no met avail	0.04735	0.15	0.09350			x	1	
1/8/10	4	NNW, N,	0.02713	0.15			x		1	1/5/2010 modification to west chip dryer
1/14/10	9	SW, WSW,	0.03434	0.15			x		1	
1/20/10	5	ENE, E, NE	0.00906	0.15				x	1	
1/26/10	10	WSW, W,	0.3496	0.15				x	1	
2/1/10	2	SW, WSW,	0.03047	0.15	0.2025			x	1	
2/7/10	2	E, ENE,	0.009812	0.15				x	1	
2/13/10	5	WNW, WSW,	0.5787	0.15				x	1	
2/19/10	5	WSW, W,	0.3383	0.15				x	1	
2/25/10	6	NW, NNW, WNW	0.05544	0.15				x	1	
3/3/10	2	N, NNE, NNW	0.02818	0.15	0.02368	0.10657		x	1	
3/9/10	2	E, ESE,	0.02424	0.15				x	1	
3/15/10	3	NNE, N,	0.02818	0.15			x		1	
3/21/10	3	ENE, NE,	0.01798	0.15			x	x	2	
3/27/10	4	ESE, SSE, SE	0.01984	0.15			x	x	2	
4/2/10	6	SW, S, SSW	0.0286	0.15	0.2645	0.164	x		1	
4/8/10	9	WNW, SW, W	1.033	0.15			x		1	
4/14/10	4	SE, SSE, E	0.0120	0.15			x	x	2	
4/20/10	2	WSW, W,	0.2342	0.15				x	1	
4/26/10	5	NNE, NE,	0.0147	0.15				x	1	
5/2/10	3	N, ,	0.1590	0.15	0.3609	0.216		x	1	
5/8/10	12	NW, WSW,	1.219	0.15			x		1	
5/14/10	9	WSW, W,	0.2966	0.15				x	1	
5/20/10	1	SE, WNW,	0.03139	0.15			x		1	
5/26/10	1	ESE, SE, W	0.09832	0.15				x	1	
6/1/10	2	SSW, W,	0.1491	0.15	0.2264	0.284		x	1	a series of modifications to west chip dryer begin
6/7/10	2	W, NW,	0.3541	0.15			x	x	2	modifications to west chip dryer end 6/8/10
6/13/10	2	W, WSW,	0.1209	0.15			x		1	
6/19/10	7	WSW, W, SW	0.4629	0.15				x	1	
6/25/10	2	SW, ,	0.04510	0.15			x	x	2	

	Avg WS, mph	WD***	24-Hr Lead Value*, ug/m3	NAAQS**	Monthly Avg	3 Mo avg	West	East	Total Dryers Operational	Comments
7/1/10	1	NE, ,	0.0817	0.15	0.1368	0.241	x		1	7/5/10 East chip dryer modified Sample Void - fuse blown
7/7/10	3	WSW, ,		0.15			x	x	2	
7/13/2010	2	ENE, E,	0.02224	0.15			x	x	2	
7/19/2010	2	WNW, ,	0.4512	0.15			x		1	
7/25/2010	1	NNE, N,	0.06077	0.15			x		1	
7/31/2010	2	E, ENE,	0.06815	0.15			x	x	2	
8/6/2010	4	W, WNW,	1.155	0.15	0.4131	0.2568		x	1	Sample Void - fuse blown Only the West Dryer in operation after 8/9/10
8/12/2010	1	NE, WNW,		0.15			x		1	
8/18/2010	3	WSW, ,	0.1120	0.15			x		1	
8/24/2010	1	ENE, ,	0.3645	0.15			x		1	
8/30/2010	2	WSW, SSW,	0.0210	0.15			x		1	
9/5/10	5	WSW, ,	0.1821	0.15	0.07521	0.2064	x		1	meteorological data not available yet. meteorological data not available yet.
9/11/10	3	E, ESE,	0.01431	0.15			x		1	
9/17/10	1	variable	0.01653	0.15					0	
9/23/10	4	SSW, SW, SE	0.01072	0.15			x		1	
9/29/10	1	SW, ,	0.1524	0.15			x		1	
10/5/10	2	WNW, W,	0.2662	0.15	0.2934	0.2606	x		1	
10/11/10	1	ENE, ,	0.05000	0.15			x		1	
10/17/10	3	W, WNW,	0.4320	0.15			x		1	
10/23/10	3	SW, S, WSW	0.01960	0.15			x		1	
10/29/10	7	WSW, W, SW	0.6994	0.15			x		1	
11/4/10	3	N, NNW, NNE	0.03267	0.15	0.01609	0.1282	x		1	West Chip Dryer down West Chip Dryer down West Chip Dryer down
11/10/10	5	E, ENE,	0.009562	0.15			x		1	
11/16/10	3	NE, ,	0.02009	0.15					0	
11/22/10	5	SSW, SW, S	0.007952	0.15					0	
11/28/10	3	S, ,	0.01016	0.15					0	
12/4/10	3	N, ,	0.02677	0.15	0.03450	0.1147	x		1	West Chip Dryer down for 16 hrs West Chip Dryer down
12/10/10	6	S, SSW,	0.05470	0.15			x		1	
12/16/10	3	WSW, W,	0.06592	0.15			x		0.5	
12/22/10	5	NNW, ,	0.007459	0.15			x		1	
12/28/10	11	WSW, SW,	0.01767	0.15					0	
1/3/11	5	SSW, SW,	0.01844	0.15	0.1947	0.0818	x		1	West Chip Dryer down
1/9/11	3	WSW, W,	0.02732	0.15					0	
1/15/11	7	WNW, NW,	0.4927	0.15			x		1	
1/21/11	6	W, WNW,	0.4291	0.15			x		1	
1/27/11	4	SW, WSW,	0.005996	0.15			x		1	

	Avg WS, mph	WD***	24-Hr Lead Value*, ug/m3	NAAQS**	Monthly Avg	3 Mo avg	West	East	Total Dryers Operational	Comments
2/2/11	7	NNW, NNE,	0.08631	0.15	0.09663	0.1086	x		1	
2/8/11	6	W, WSW,	0.03563	0.15					0	West Chip Dryer down 23 Hrs
2/14/11	9	NW, W,	0.2633	0.15			x		1	
2/20/11	6	ENE, E,	0.01316	0.15			x		0.5	West Chip Dryer down 11 Hrs
2/26/11	1	ESE, ,	0.08476	0.15			x		1	West Chip Dryer down 2 Hrs
3/4/11	3	E, NE,	0.007293	0.15	0.04045	0.1106	x		1	
3/10/11	5	NW, NNW,	0.07804	0.15			x		0.5	West Chip Dryer down 12 Hrs
3/16/11	5	WSW, ,	0.05068	0.15			x		1	
3/22/11	7	ENE, ,	0.00852	0.15			x		1	
3/28/11	2	NNW, N,	0.05771	0.15			x		1	
4/3/11	6	E, ESE,	0.01421	0.15	0.06084	0.0660	x		1	
4/9/11	4	ESE, E,	0.009110	0.15			x		1	
4/15/11	12	ENE, ,	0.01527	0.15			x		1	
4/21/11	5	W, ,	0.06482	0.15			x		0.5	West Chip Dryer down 11 Hrs
4/27/11	6	WNW, ,	0.2008	0.15			x		0.5	West Chip Dryer down 12 Hrs
5/3/11	4	N, NNE,	0.03403	0.15	0.01283	0.0380	x		1	
5/9/11	7	ESE, ,	0.008887	0.15			x		1	
5/15/11	6	NE, ,	0.004315	0.15			x		1	
5/21/11	4	SE, E,	0.006710	0.15			x		1	
5/27/11	5	E, ENE,	0.01020	0.15			x		1	
6/2/11	3	E, ,	0.01714	0.15	0.03049	0.0347	x		1	
6/8/11	7	SW, WSW,	0.07005	0.15			x		1	
6/14/11	5	ENE, E,	0.0281	0.15					0	West Chip Dryer down 24 Hrs
6/20/11	3	E, ,	0.008172	0.15			x		1	
6/26/11	3	E, ENE,	0.02898	0.15			x		1	
7/2/11	6	WSW, SW,	0.5934	0.15	0.17158	0.0716	x		1	
7/8/11	2	ENE, ,	0.07279	0.15			x		1	
7/14/11	3	E, ENE,	0.006565	0.15					0	West Chip Dryer down 24 Hrs
7/20/11	5	WSW, SW,	0.1179	0.15			x		1	
7/26/11	4	WNW, WSW,	0.06722	0.15					0	West Chip Dryer down 24 Hrs
8/1/11	5	W, WNW,	0.2953	0.15	0.12761	0.10989	x		1	
8/7/11	5	W, WSW,	0.1603	0.15			x		1	
8/13/11	3	ESE, ,	0.03905	0.15			x		1	
8/19/11	1	SW, ,	0.03379	0.15			x		1	
8/25/11	4	NW, ,	0.217	0.15			x		1	
8/31/11	2	ESE, E,	0.02022	0.15			x		1	

	Avg WS, mph	WD***	24-Hr Lead Value*, ug/m3	NAAQS**	Monthly Avg	3 Mo avg	West	East	Total Dryers Operational	Comments
9/6/11	3	ENE, NE	0.01346	0.15	0.038878	0.11269	x		1	
9/12/11	6	WSW, SW	0.02504	0.15			x		0.5	West Chip Dryer down 12 Hrs
9/18/11	4	ESE, E	0.01838	0.15			x		1	
9/24/11	3	ESE, E	0.05137	0.15			x		1	
9/30/11	4	NNW, NW	0.08614	0.15			x		1	
10/6/11	1	NE, ENE	0.01228	0.15	0.0914502	0.08598	x		0.5	West Chip Dryer down 18 Hrs
10/12/11	3	ENE, E	0.009588	0.15			x		1	
10/18/11	2	N, NNE	0.02868	0.15			x		1	
10/24/11	7	W, WSW	0.3997	0.15			x		1	
10/30/11	3	SE, E	0.007003	0.15			x		1	
11/5/11	3	ESE, SSE	0.00444	0.15	0.0249338	0.05175	x		1	
11/11/11	6	WSW, SSW	0.04425	0.15			x		0.5	West Chip Dryer down 6 Hrs
11/17/11	6	W, WSW	0.06566	0.15					0	West Chip Dryer down 24 Hrs
11/23/11	5	W, WSW	0.003913	0.15					0	West Chip Dryer down 24 Hrs
11/29/11	8	NNE, N	0.006406	0.15			x		1	
12/5/11	3	NNE, E	0.004333	0.15	0.0065053	0.04096	x		0.5	West Chip Dryer down 12 Hrs
12/11/11	0	SW, SSW	0.01131	0.15					0	West Chip Dryer down 24 Hrs
12/17/11	3	SE, E	VOID	0.15			x		0.5	West Chip Dryer down 4 Hrs
12/23/11	3	S, N	0.003927	0.15					0	West Chip Dryer down 24 Hrs
12/29/11	4	SE, ESE	0.006451	0.15			x		0.5	West Chip Dryer down 12 Hrs
1/4/12	7	SSW, W	0.09062	0.15	0.0362962	0.02258	x		0.5	West Chip Dryer down 8 hrs
1/10/12	4	WSW, SW	0.02089	0.15			x		0.5	West Chip Dryer down 14 hrs
1/16/12	4	SW, SE	0.005026	0.15			x		1	West Chip Dryer down 1 hr
1/22/12	6	SE, E	0.006815	0.15			x		1	
1/28/12	10	WSW, SSW	0.05813	0.15			x		1	
2/3/12	2	NE, E	0.01921	0.15	0.02766	0.02349	x		0.5	West Chip Dryer down 15 hrs
2/9/12	9	WSW, SW	0.02724	0.15			x		1	
2/15/12	5	SW, SSW	0.006977	0.15			x		1	
2/21/12	7	SW, ESE	0.009333	0.15			x		1	
2/27/12	10	W, WSW	0.07554	0.15					0	West Chip Dryer down 24hrs
3/4/12	4	NW, W	0.04125	0.15	0.020791	0.02825	x		1	
3/10/12	7	SW, W	0.01242	0.15			x		0.5	West Chip Dryer down 12 hrs
3/16/12	2	SE, E	0.02769	0.15			x		0.5	West Chip Dryer down 14 hrs
3/22/12	3	E, WSW	0.01685	0.15			x		0.5	West Chip Dryer down 12 hrs
3/28/12	11	W, WNW	0.005745	0.15			x		1	
4/3/12	3	E, E	0.02616	0.15	0.0621838	0.03688	x		0.5	West Chip Dryer down 3 hrs

	Avg WS, mph	WD***	24-Hr Lead Value*, ug/m3	NAAQS**	Monthly Avg	3 Mo avg	West	East	Total Dryers Operational	Comments
4/9/12	9	WNW, W.	0.1562	0.15			x		1	
4/15/12	6	SW, S.	0.007062	0.15			x		1	
4/21/12	5	NNE, N.	0.006797	0.15			x		1	
4/27/12	3	NNW, WNW.	0.1147	0.15			x		0.5	West Chip Dryer down 10 hrs
5/3/12	5	variable	0.0425	0.15	0.059186	0.04739	x		1	
5/9/12	4	WNW, W.	0.1154	0.15			x		1	
5/15/12	6	WSW, .	0.05332	0.15			x		1	
5/21/12	4	N, N.	0.05903	0.15			x		1	West Chip Dryer down 1 hrs
5/27/12	7	E, ENE.	0.02568	0.15			x		1	
6/2/12	10	WSW, W.	0.0669	0.15	0.06243	0.06127	x		1	
6/8/12	6	WSW, SW.	0.05442	0.15			x		1	
6/14/12	4	ESE, E.	0.01294	0.15			x		1	
6/20/12	6	SW, SSW.	0.00819	0.15			x		0.5	West Chip Dryer down 8 hrs
6/26/12	2	W, E.	0.1697	0.15			x		1	
7/2/12	2	variable	0.02239	0.15	0.0331838	0.05160	x		0.5	West Chip Dryer down 4 hrs
7/8/12	2	NNE, NE.	0.0164	0.15			x		0.5	West Chip Dryer down 12 hrs
7/14/12	2	S, .	0.01996	0.15			x		1	
7/20/12	3	ENE, NE.	0.007309	0.15			x		1	
7/26/12	5	W, WSW.	0.09986	0.15			x		0.5	West Chip Dryer down 12 hrs
8/1/12	2	W, WNW.	0.1081	0.15	0.046043	0.04722	x		0.5	West Chip Dryer down 12 hrs
8/7/12	5	WSW, .	0.08167	0.15			x		1	
8/13/12	2	E, .	0.007059	0.15			x		1	
8/19/12	1	ENE, .	0.009799	0.15					0	West Chip Dryer down 24 hrs
8/25/12	2	SSE, .	0.01573	0.15			x		1	
8/31/12	7	SW, W.	0.0539	0.15					0	West Chip Dryer down 23 hrs
9/6/12	2	W, .	0.02342	0.15	0.03192	0.03705			0	West Chip Dryer down 24 hrs
9/12/12	4	SW, .	0.02728	0.15			x		1	
9/18/12	4	NW, WNW.	0.07274	0.15			x		1	
9/24/12	7	SW, WSW.	0.017	0.15			x		1	West Chip Dryer down 2 hrs
9/30/12	2	ENE, .	0.01916	0.15			x		1	
10/6/12	6	W, WNW.	0.08001	0.15	0.022978	0.03365	x		1	
10/12/12	2	E, .	0.02275	0.15			x		1	
10/18/12	6	SW, SE.	0.002885	0.15			x		1	
10/24/12	2	ENE, SSE.	0.004851	0.15			x		1	
10/30/12	7	NNW, N.	0.004394	0.15					0	West Chip Dryer down 24 hrs
11/5/12	2	E, N.	0.003494	0.15	0.0168824	0.02393	x		1	

	Avg WS, mph	WD***	24-Hr Lead Value*, ug/m3	NAAQS**	Monthly Avg	3 Mo avg	West	East	Total Dryers Operational	Comments
11/11/12	8	SSW, SW,	0.006154	0.15			x		1	
11/17/12	1	ENE, ,	0.03263	0.15			x		0.5	West Chip Dryer down 12 hrs
11/23/12	13	W, WNW,	0.0324	0.15			x		0.5	West Chip Dryer down 14 hrs
11/29/12	5	SW, ,	0.009734	0.15			x		1	
12/5/12	3	NW, NNW,	0.01667	0.15	0.0143116	0.01806	x		1	
12/11/12	4	SW, ,	0.003898	0.15			x		0.5	West Chip Dryer down 10 hrs
12/17/12	4	WSW, W,	0.03924	0.15			x		0.5	West Chip Dryer down 4 hrs
12/23/12	3	NW, SW,	0.007719	0.15					0	West Chip Dryer down 24 hrs
12/29/12	3	ENE, ,	0.004031	0.15			x		1	

Summary of 24-Hr Lead Levels At Reed St, Belding

Updated 3/11/13

AIRS ID = 260670002

* Expressed to four significant figures using truncation at local conditions.

** NAAQS = 0.15 ug/m3 as a rolling 3 month average.

*** WD's shown if wind is from 1 direction for 5hr or more. Otherwise, see Belding Met Summary Sheet

Dryer Operational

	Avg WS, mph	WD***	24-Hr Lead Value*, ug/m3	NAAQS**	Monthly Avg	3 Mo avg	West	East	Total Dryers Operational	Comments
7/2/11	6	WSW, SW,	0.8113	0.15	0.2987	—	x		1	
7/8/11	2	ENE, ,	0.008781	0.15			x		1	
7/14/11	3	E, ENE,	0.003859	0.15					0	West Chip Dryer down 24 Hrs
7/20/11	5	WSW, SW,	0.6453	0.15			x		1	
7/26/11	4	WNW, WSW,	0.02431	0.15					0	West Chip Dryer down 24 Hrs
8/1/11	5	W, WNW,	0.05028	0.15	0.05867	—	x		1	
8/7/11	5	W, WSW,	0.1197	0.15			x		1	
8/13/11	3	ESE, ,	0.09116	0.15			x		1	
8/19/11	1	SW, ,	0.06236	0.15			x		1	
8/25/11	4	NW, ,	0.01911	0.15			x		1	
8/31/11	2	ESE, E,	0.009414	0.15			x		1	
9/6/11	3	ENE, NE,	0.003035	0.15	0.1805328	0.17930	x		1	
9/12/11	6	WSW, SW,	0.8689	0.15			x		0.5	West Chip Dryer down 12 Hrs
9/18/11	4	ESE, ,	0.008639	0.15			x		1	
9/24/11	3	ESE, E,	0.0144	0.15			x		1	
9/30/11	4	NNW, NW,	0.00769	0.15			x		1	
10/6/11	1	NE, ENE,	0.007058	0.15	0.038461	0.09255	x		0.5	West Chip Dryer down 18 Hrs
10/12/11	3	ENE, E,	0.003727	0.15			x		1	
10/18/11	2	N, NNE,	0.03199	0.15			x		1	
10/24/11	7	W, WSW,	0.1312	0.15			x		1	
10/30/11	3	SE, ,	0.01833	0.15			x		1	
11/5/11	3	ESE, SSE,	0.005246	0.15	0.0169062	0.07863	x		1	
11/11/11	6	WSW, SSW,	0.06361	0.15			x		0.5	West Chip Dryer down 6 Hrs
11/17/11	6	W, WSW,	0.01054	0.15					0	West Chip Dryer down 24 Hrs
11/23/11	5	W, WSW,	0.003671	0.15					0	West Chip Dryer down 24 Hrs
11/29/11	8	NNE, N,	0.001464	0.15			x		1	
12/5/11	3	NNE, ,	0.001805	0.15	0.0202858	0.02522	x		0.5	West Chip Dryer down 12 Hrs
12/11/11	0	SW, SSW,	0.07884	0.15					0	West Chip Dryer down 24 Hrs
12/17/11	3	SE, ,	0.01382	0.15			x		0.5	West Chip Dryer down 4 Hrs
12/23/11	3	S, N,	0.002425	0.15					0	West Chip Dryer down 24 Hrs
12/29/11	4	SE, ESE,	0.004539	0.15			x		0.5	West Chip Dryer down 12 Hrs
1/4/12	7	SSW, W,	0.04974	0.15	0.0530438	0.03008	x		0.5	West Chip Dryer down 8 hrs
1/10/12	4	WSW, SW,	0.1155	0.15			x		0.5	West Chip Dryer down 14 hrs

	Avg WS, mph	WD***	24-Hr Lead Value*, ug/m3	NAAQS**	Monthly Avg	3 Mo avg	West	East	Total Dryers Operational	Comments
1/16/12	4	SW, SE,	0.07884	0.15			x		1	West Chip Dryer down 1 hr
1/22/12	6	SE, E,	0.004739	0.15			x		1	
1/28/12	10	WSW, SSW,	0.0164	0.15			x		1	
2/3/12	2	NE, ,	0.00905	0.15	0.058342	0.04389	x		0.5	West Chip Dryer down 15 hrs
2/9/12	9	WSW, SW,	0.1075	0.15			x		1	
2/15/12	5	SW, SSW,	0.06451	0.15			x		1	
2/21/12	7	SW, ESE,	0.09417	0.15			x		1	
2/27/12	10	W, WSW,	0.01648	0.15					0	West Chip Dryer down 24hrs
3/4/12	4	NW, ,	0.002444	0.15	0.0369928	0.04946	x		1	
3/10/12	7	SW, ,	0.03253	0.15			x		0.5	West Chip Dryer down 12 hrs
3/16/12	2	SE, ,	0.01978	0.15			x		0.5	West Chip Dryer down 14 hrs
3/22/12	3	E, WSW,	0.01481	0.15			x		0.5	West Chip Dryer down 12 hrs
3/28/12	11	W, WNW,	0.1154	0.15			x		1	
4/3/12	3	E, ,	0.01354	0.15	0.034877	0.04340	x		0.5	West Chip Dryer down 3 hrs
4/9/12	9	WNW, W,	0.03137	0.15			x		1	
4/15/12	6	SW, S,	0.1189	0.15			x		1	
4/21/12	5	NNE, N,	0.005639	0.15			x		1	
4/27/12	3	NNW, WNW,	0.004936	0.15			x		0.5	West Chip Dryer down 10 hrs
5/3/12	5	variable	0.04342	0.15	0.048929	0.04027	x		1	
5/9/12	4	WNW, W,	0.003767	0.15			x		1	
5/15/12	6	WSW, ,	0.1701	0.15			x		1	
5/21/12	4	N, N,	0.01944	0.15			x		1	West Chip Dryer down 1 hrs
5/27/12	7	E, ENE,	0.007918	0.15			x		1	
6/2/12	10	WSW, W,	0.05871	0.15	0.048127	0.04398	x		1	
6/8/12	6	WSW, SW,	0.05271	0.15			x		1	
6/14/12	4	ESE, E,	0.004205	0.15			x		1	
6/20/12	6	SW, SSW,	0.1048	0.15			x		0.5	West Chip Dryer down 8 hrs
6/26/12	2	W, E,	0.02021	0.15			x		1	
7/2/12	2	variable	0.01352	0.15	0.02104	0.03937	x		0.5	West Chip Dryer down 4 hrs
7/8/12	2	NNE, NE,	0.002071	0.15			x		0.5	West Chip Dryer down 12 hrs
7/14/12	2	S, ,	0.06031	0.15			x		1	
7/20/12	3	ENE, NE,	0.005409	0.15			x		1	
7/26/12	5	W, WSW,	0.02389	0.15			x		0.5	West Chip Dryer down 12 hrs
8/1/2012	2	W, WNW,	0.01906	0.15	0.06473033	0.04463	x		0.5	West Chip Dryer down 12 hrs
8/7/2012	5	WSW, ,	0.2304	0.15			x		1	
8/13/2012	2	E, ,	0.02003	0.15			x		1	
8/19/2012	1	ENE, ,	0.006662	0.15					0	West Chip Dryer down 24 hrs
8/25/2012	2	SSE, ,	0.01506	0.15			x		1	
8/31/2012	7	SW, W,	0.09717	0.15					0	West Chip Dryer down 23 hrs

Appendix 2
Preventative Maintenance/
Malfunction Abatement Plan
(PM/MAP)

A.2 PM/MAP submitted by facility



December 16, 2011

Ms. Heidi G. Hollenbach
District Supervisor
Air Quality Division
State Office Building
350 Ottawa N.W.
Unit 10
Grand Rapids, Mi 49503-2341

Dear Ms. Hollenbach,

This letter is written in response to a request in the Extruded Metals "Permit To Install 16-11" dated October 20, 2011, for a Preventative Maintenance/Malfunction Abatement Plan (PM/MAP) for the East and West Baghouse as well as the West Chip Dryer.

Enclosed you will find the PM/MAP Plan for the Extruded Metals facility located in Belding Michigan which is part of Mueller Brass Company. We have also reviewed this plan with Eric Grinstern at an earlier date.

Please contact us if you have any questions in regards to the attached plan.

Sincerely,

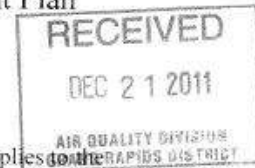
A handwritten signature in cursive script, appearing to read 'Laura Shears'.

Ms. Laura Shears
Environmental/Health and Safety Manager
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12/15/11

Preventative Maintenance and Malfunction Abatement Plan
Mueller Brass – Belding, MI
FGMELTFURN



1.0 General Description

This preventative maintenance and malfunction abatement plan applies to the baghouses (east and west) servicing the following emission units: EUMELTFURN7, EUMELTFURN8, EUMELTFURN9; operated pursuant to permit No. 16-11 from the Michigan Department of Environmental Quality.

2.0 Operation of the baghouse

The baghouse consists of a "drop out" box (or cyclone), dirty gas chamber, filter elements, clean gas chamber, and a discharge fan. The "drop out" box (or cyclone) removes the large particulate matter from the airstream. The filter elements remove the remaining particulate from the dirty gas. The filters are cleaned with a pulsating reverse air flow scavenging system that is built internally into the baghouse. The clean gas is exhausted with a centrifugal blower to the atmosphere.

3.0 Preventative Maintenance

The maintenance manager is responsible for overseeing the inspection, maintenance and repair of the baghouses. Inspections and maintenance are in accordance with the manufacturers' recommendations. Preventative Maintenance work orders are recorded and documented in accordance with Mueller procedures.

3.1 Rotary Airlocks

The rotary airlocks for the baghouse particulate matter discharge are monitored electronically. An alarm is used to indicate if the rotary airlock is not operational.

3.2 Scavenging System

The scavenging system; fan, carriage, impulse damper, and lip seal is inspected weekly. This is a visual inspection. The internal scavenging plenum is inspected quarterly.

3.3 Filter Bags

The differential pressure across the bags is continuously recorded electronically. Cleaning cycle of the scavenging system is automatically initiated based on the differential pressure. Normal operating range is 2-6 in-H₂O. The bags are visually inspected quarterly for leaks.

3.4 Exhaust Fan

The exhaust fan is inspected daily and the bearings lubricated as required by the manufacture. This is a visual inspection. System exhaust air flow is recorded quarterly.

3.5 Summary of PM Schedule

ITEM	PM	NORMAL OPERATION
Daily		
Rotary Airlocks	Check for dust in bag/box.	
Differential Filter Pressure	Check differential pressure	Normal: 2-6 in-H ₂ O
Exhaust Fan	Check for proper operation Lubricate as required	No vibration
Weekly		
Scavenging System	Check for proper operation.	All components working
Monthly		
Baghouse Area	Pick-up and remove any particulate dust on the ground	General area around baghouse is clean
Quarterly		
Inspect Bags	Inspect bags for leaks/holes	No dust inside bag
Airflow readings	Record airflow	Discharge stack airflow 54,000 - 66,000 cfm

4.0 Corrective Actions

In the event of a malfunction the issue will be corrected in a timely manner and/or the system will be shut down. The action required to make the correction will be documented.

Item	Malfunction	Correction
Rotary Airlocks	No dust from airlock	Check operation of valve. Check operation of scavenging system
Differential Filter Pressure	Pressure over 6 in-H ₂ O	Check supply lines Check operation of scavenging system
Differential Filter Pressure	Pressure below 2 in-H ₂ O	Check supply lines Visually inspect for bad filter bags
Exhaust Airflow	Airflow to low/high	Check fan belts and sheaves Check for leaks (bags, seals, ductwork)

5.0 Replacement Parts

The following items are deemed critical parts for the operation of the baghouse. These spare parts are managed to reduce downtime in the event of a failure: Filter bags, rotary airlock, lip seals, differential pressure gage and exhaust blower motor and wheel.

6.0 General Maintenance

The particulate matter that is removed from the airstream shall be contained in an effective manner to prevent discharge of the particulate into the environment. The baghouse shall be kept in good repair and the general area to maintain good housekeeping.

**Preventative Maintenance and Malfunction Abatement Plan
Mueller Brass – Belding, MI
FGCHIPDRYER**

1.0 General Description

This preventative maintenance and malfunction abatement plan applies to the West Chip Dryer (EUWCHIPDRYER) and the East Chip Dryer (EUECHIPDRYER) operating pursuant to permit No. 16-11 from the Michigan Department of Environmental Quality. The following PM/MAP plan is directly related to the West Chip Dryer. The East Chip Dryer is not operation at this time and the PM/MAP will be updated at the time it goes into service.

2.0 Operation of the Scrubber

The dryer uses hot gas to dry brass chips which contain oil and moisture residue from prior machining operations. The cyclone removes the primary particulate loading and the thermal oxidizer combusts the volatiles prior to entering the scrubber. The function of the scrubber is to evaporatively cool the gas and remove particulate and HCL prior to discharge. The scrubber uses dual phase air atomizing nozzles and a two stage chevron mist eliminator.

2.1 Scrubber Inlet Duct

The purpose of the two atomizing nozzles at the inlet to the scrubber is to saturate the air with water until it reaches the adiabatic temperature (the temperature at which evaporation ceases).

2.2 The atomizing scrubbing nozzles in the scrubber remove the particulate in the gas stream. The overlapping spray pattern covers the entire area of the scrubber and the droplet size is designed to remove fine particulate in the air stream.

2.3 The mist eliminator is designed to remove mist that is carried in the airstream. This is to prevent particulate laden moisture from exiting the system in the airstream.

3.0 Preventative Maintenance

The maintenance manager is responsible for overseeing the inspection, maintenance and repair of the west chip dryer. Inspections and maintenance are in accordance with the manufacturers' recommendations. Preventative Maintenance work orders are recorded and documented in accordance with Mueller procedures.

3.1 Cyclones

The cyclones are visually inspected daily for proper operation. Proper operation can be determined by visually inspecting and verifying that there is discharge from the cyclone. If the cyclone is not operating correctly the problem is fixed as soon as possible.

3.2 Thermal Oxidizer

The thermal oxidizer and controls are monitored using a thermocouple and a controller. If the thermal oxidizer is not operating correctly the system display will indicate a problem. The chip feed is automatically shut off when the temperature is

below 1,500 F. Thermal oxidizer temperature is continuously recorded electronically. The temperature controller is calibrated twice per year.

3.3 Scrubber Inlet Quench

The scrubber inlet temperature is continuously monitored and recorded to verify that the hot air entering the scrubber is at adiabatic temperature. The water flow and the air pressures for the quench sprays are adjusted to maintain the inlet air temperature; recommended set points are listed in the machine manual. A temperature over 220°F indicates a problem and the chip feed is automatically shut off.

3.4 Scrubber Nozzles

The three scrubber nozzle water pressure and water flow rates are monitored and recorded to verify that the nozzles are working properly. The design flow rate for the water is 3.0 ± 0.5 GPM per nozzle. The water pressure should be between 60 and 80 psi. The setpoints are monitored daily.

3.5 Mist Eliminator

The mist eliminator is used to remove the fine mist in the air stream. The mist eliminators are visually inspected and cleaned quarterly.

3.6 Summary of PM Schedule

ITEM	PM	NORMAL OPERATION
Daily		
Exhaust Plume	Visually inspect	Normal, light/gray colored
Cyclone	Check for proper operation	Discharging Dust
Booster Pump	Check for Faults Check pressure	None 90-100 psi
Nozzle A – Inlet	Check water flow and pressure Check air pressure	0.2 gpm min; 3.3 gpm max Varies
Nozzle B – Quench at tee	Check air pressure Check water flow and pressure	66 psi 3.5 gpm; 66-80 psi
Nozzle C – Quench at scrubber	Check air pressure Check water flow and pressure	70 psi 5.5 gpm; 70-85 psi
Nozzle D – Scrubbing	Check air pressure Check water flow and pressure	60 psi 3.0 gpm; 60-75 psi
Scrubber Plate Nozzles	Check water pressure	32 psi
Mist eliminator Nozzles	Check water pressure	18 psi
Quarterly		
Mist Eliminator	Inspect and clean chevron plates	Fins should be clean
Scrubber Plate Nozzles	Inspect and clean nozzles	No buildup in nozzle tip
Mist eliminator Nozzles	Inspect and clean nozzles	No buildup in nozzle tip
Nozzles A, B, C, & D	Inspect and clean nozzle heads	No buildup in nozzle heads
Yearly		
Discharge stack	Test stack air flow	Per OEM Recommendations

4.0 Corrective Actions

In the event of a malfunction the issue will be corrected in a timely manner and/or the system will be shut down. The action required to make the correction will be documented.

Item	Malfunction	Correction
Cyclones	No dust from bottom of cyclone.	Clean cyclone. Check operation of dump valve.
Thermal Oxidizer	Temperature below 1500 F.	Verify correct operation of gas train. Replace temperature probe.
Scrubber Temp	Temperature over 220 F	Adjust flow controls. Check water flow to nozzles. Clean nozzles. Replace temperature probe.
Scrubber Nozzles	Water flow out of range 3.0 ± 0.5 GPM Air Pressure out of range 60 ± 5 PSI Water pressure between 60 – 80 psi	Adjust flow controls. Clean nozzles.
System Pressure	Can not control to setpoint (0 to -0.5 in-H ₂ O)	Clean mist eliminators. Check damper operation.

5.0 Replacement Parts

The following items are deemed critical parts for the operation of the dryer. These spare parts are managed to reduce downtime in the event of a failure: Combustion burner, quench spray nozzles, scrubbing nozzles, and mist eliminator.

6.0 General Maintenance

The particulate matter that is removed from the airstream shall be contained in an effective manner to prevent discharge of the particulate into the environment.

Appendix 3

Permit to Install

A.3.1 PTI No. 16-11

A.3.2 PTI No. 16-11 Evaluation Form

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

October 20, 2011
REVISED March 15, 2012



The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: April 21, 2011	
DATE PERMIT TO INSTALL APPROVED: October 20, 2011	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

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Common Abbreviations / Acronyms

Common Acronyms		Pollutant/Measurement Abbreviations	
AQD	Air Quality Division	BTU	British Thermal Unit
ANSI	American National Standards Institute	°C	Degrees Celsius
BACT	Best Available Control Technology	CO	Carbon Monoxide
CAA	Clean Air Act	dscf	Dry standard cubic foot
CEM	Continuous Emission Monitoring	dscm	Dry standard cubic meter
CFR	Code of Federal Regulations	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H ₂ S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	NO _x	Oxides of Nitrogen
MDEQ	Michigan Department of Environmental Quality (Department)	PM	Particulate Matter
MIOSHA	Michigan Occupational Safety & Health Administration	PM10	PM less than or equal to 10 microns diameter
MSDS	Material Safety Data Sheet	PM2.5	PM less than or equal 2.5 microns diameter
NESHAP	National Emission Standard for Hazardous Air Pollutants	pph	Pound per hour
NSPS	New Source Performance Standards	ppm	Parts per million
NSR	New Source Review	ppmv	Parts per million by volume
PS	Performance Specification	ppmw	Parts per million by weight
PSD	Prevention of Significant Deterioration	psia	Pounds per square inch absolute
PTE	Permanent Total Enclosure	psig	Pounds per square inch gauge
PTI	Permit to Install	scf	Standard cubic feet
RACT	Reasonably Available Control Technology	sec	Seconds
ROP	Renewable Operating Permit	SO ₂	Sulfur Dioxide
SC	Special Condition	THC	Total Hydrocarbons
SCR	Selective Catalytic Reduction	tpy	Tons per year
SRN	State Registration Number	µg	Microgram
TAC	Toxic Air Contaminant	VOC	Volatile Organic Compounds
TEQ	Toxicity Equivalence Quotient	yr	Year
VE	Visible Emissions		

* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
 - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
 - b) A visible emission limit specified by an applicable federal new source performance standard.
 - c) A visible emission limit specified as a condition of this Permit to Install.
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Flexible Group ID
EUECHIPDRYER	The east brass chip dryer with a cyclone, thermal oxidizer, precoolers/wet scrubber and a demister for control. The chip dryer has a drying capacity of 20,000 pounds of brass turnings per hour.	FGCHIPDRYERS
EUWCHIPDRYER	The west brass chip dryer with a cyclone, thermal oxidizer, precoolers/wet scrubber and a demister for control. The chip dryer has a drying capacity of 20,000 pounds of brass turnings per hour.	FGCHIPDRYERS
EUMELTFURN7	Induction melting furnace with associated pressurized holder and horizontal casters. The induction melting furnaces are controlled by the east baghouse.	FGMELTFURN
EUMELTFURN8	Induction melting furnace with associated pressurized holder and horizontal casters. The induction melting furnaces are controlled by the east baghouse.	FGMELTFURN
EUMELTFURN9	Induction melting furnace with associated pressurized holder and horizontal casters. The induction melting furnaces are controlled by the west baghouse.	FGMELTFURN

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGCHIPDRYERS	East and west chip dryers. Each chip dryer has its own associated cyclone, thermal oxidizer, precoolers/wet scrubber and demister for control.	EUECHIPDRYER, EUWCHIPDRYER
FGMELTFURN	Three induction melting furnaces and associated pressurized holder, three horizontal casters and two baghouses.	EUMELTFURN7, EUMELTFURN8, EUMELTFURN9
FGFACILITY	All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.	All

The following conditions apply to: FGCHIPDRYERS

DESCRIPTION: East and west chip dryers

Emission Units: EUECHIPDRYER, EUWCHIPDRYER

POLLUTION CONTROL EQUIPMENT: Each chip dryer has its own associated cyclone, thermal oxidizer, precooler/wet scrubber and demister

I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Particulate	0.10 lb/1,000 lbs of exhaust gas on a dry gas basis	Test Protocol will specify averaging time	Each chip dryer	SC V.1, V.2	R 336.1331
2. Particulate	1.0 pph	Test Protocol will specify averaging time	East Chip Dryer	SC V.1	R 336.1331
3. Particulate	1.6 pph	Test Protocol will specify averaging time	West Chip Dryer	SC V.2	R 336.1331
4. Lead	23 mg/dscm	Test Protocol will specify averaging time	Each chip dryer	SC V.1, V.2	R 336.2804, 40 CFR 52.21(d)
5. Lead	0.2 pph	Test Protocol will specify averaging time	East Chip Dryer	SC V.1	R 336.2804, 40 CFR 52.21(d)
6. Lead	0.3 pph	Test Protocol will specify averaging time	West Chip Dryer	SC V.2	R 336.2804, 40 CFR 52.21(d)
7. Sulfuric Acid	25 mg/dscm	Test Protocol will specify averaging time	Each chip dryer	SC V.1, V.2	R 336.1224, R 336.1225
8. Sulfuric Acid	0.2 pph	Test Protocol will specify averaging time	Each chip dryer	SC V.1, V.2	R 336.1224, R 336.1225
9. Hydrogen chloride	8 mg/dscm	Test Protocol will specify averaging time	Each chip dryer	SC V.1, V.2	R 336.1224, R 336.1225
10. Hydrogen chloride	0.06 pph	Test Protocol will specify averaging time	Each chip dryer	SC V.1, V.2	R 336.1224, R 336.1225

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. No later than 60 days after issuance of this permit, the permittee shall submit to the AQD District Supervisor, for review and approval, a preventative maintenance / malfunction abatement plan (PM / MAP) for

FGCHIPDRYERS. After approval of the PM / MAP by the AQD District Supervisor, the permittee shall not operate FGCHIPDRYERS unless the PM / MAP, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. At a minimum the plan shall include:

- a) Identification of the equipment and, if applicable, air-cleaning device and the supervisory personnel responsible for overseeing the inspection, maintenance, and repair
- b) Description of the items or conditions to be inspected and frequency of the inspections or repairs
- c) Identification of the equipment and, if applicable, air-cleaning device, operating parameters that shall be monitored to detect a malfunction or failure, the normal operating range of these parameters and a description of the method of monitoring or surveillance procedures
- d) Identification of the major replacement parts that shall be maintained in inventory for quick replacement
- e) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits

If the plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan for approval to the AQD District Supervisor. Should the AQD determine the PM / MAP to be inadequate, the AQD District Supervisor may request modification of the plan to address those inadequacies. **(R 336.1205, R 336.1702(a), R 336.1910, R 336.1911, R 336.1912, R 336.2804, 40 CFR 52.21 (d))**

2. The permittee shall not operate either chip dryer in FGCHIPDRYERS unless a minimum temperature of 1500°F and a minimum retention time of 0.5 seconds in each chip dryers associated thermal oxidizer is maintained. **(R 336.1205, R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate either chip dryer in FGCHIPDRYERS unless the associated thermal oxidizer is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the thermal oxidizer includes maintaining a minimum temperature of 1500°F and a minimum retention time of 0.5 seconds, as required by SC III.2. **(R 336.1205, R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
2. The permittee shall not operate either chip dryer in FGCHIPDRYERS unless the associated cyclone, precooler/wet scrubber and demister are installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the precooler/wet scrubber includes maintaining the water flow, nozzle water pressure and nozzle air pressure in the range as specified by the manufacturer or as determined during performance testing. **(R 336.1205, R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
3. The permittee shall not operate EUECHIPDRYER (east chip dryer) unless the equivalent or better control to EUWCHIPDRYER is installed, maintained, and operated in a satisfactory manner. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910, R 336.2804, 40 CFR 52.21 (d))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 90 days after restart of EUECHIPDRYER, the permittee shall verify the lead, PM, sulfuric acid, and hydrogen chloride emission rates from EUECHIPDRYER by testing at owner's expense, in accordance with Department requirements. The permittee must complete the testing once every five years, thereafter. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.1224, R 336.1225, R 336.2001, R 336.2003, R 336.2004, R 336.2804, 40 CFR 52.21 (d))**

2. Within the first five years after permit issuance, the permittee shall verify the lead, PM, sulfuric acid, and hydrogen chloride emission rates from EUWCHIPDRYER, by testing at owner's expense, in accordance with Department requirements. The permittee must complete the testing once every five years, thereafter. No less than 60 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.1224, R 336.1225, R 336.1331, R 336.2001, R 336.2003, R 336.2004, R 336.2804, 40 CFR 52.21 (d))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the temperature of the thermal oxidizer on a continuous basis when the associated chip dryer is operating. **(R 336.1205, R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
2. The permittee shall maintain a log of all maintenance activities conducted according to the PM / MAP (pursuant to SC III.1). The permittee shall keep this log on file at the facility and make it available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702(a), R 336.1911, R 336.2804, 40 CFR 52.21 (d))**
3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the nozzle water pressure for the precooler/scrubber system when the associated chip dryer is operating. **(R 336.1205, R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
4. The permittee shall keep, in a satisfactory manner, a record of a reading that will be taken once each shift of the nozzle water pressure for the precooler/scrubber system for each associated chip dryer that is operating. All records shall be kept on file at the facility and made available to the Department upon request. **(R 336.1205, R 336.1225, R 336.1702, R 336.1901, R 336.1910, R 336.2804, 40 CFR 52.21(d))**
5. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the water flow rate for the precooler/scrubber system when the associated chip dryer is operating. **(R 336.1205, R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
6. The permittee shall keep, in a satisfactory manner, a record of a reading that will be taken once each shift of the water flow rate to the precooler/scrubber system for each associated chip dryer that is operating. All records shall be kept on file at the facility and made available to the Department upon request. **(R 336.1205, R 336.1225, R 336.1702, R 336.1901, R 336.1910, R 336.2804, 40 CFR 52.21(d))**

VII. REPORTING

1. At least seven calendar days prior to start-up, the permittee shall notify the AQD District Supervisor in writing of the start-up date of EUWCHIPDRYER covered by this permit. **(R 336.1201)**

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVECHIPDRYER	24	122	R 336.1225, R 336.2804, 40 CFR 52.21 (d)
2. SVWCHIPDRYER	24	122	R 336.1225, R 336.2804, 40 CFR 52.21 (d)

IX. OTHER REQUIREMENTS

1. The minimum stack height above ground level listed in SC VIII.1 and VIII.2 shall apply within 150 days of issuance of this permit. **(R 336.1225, R 336.2804, 40 CFR 52.21 (d))**

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

The following conditions apply to: FGMELTFURN

DESCRIPTION: Three induction melting furnaces with associated pressurized holder and three horizontal casters

Emission Units: EUMELTFURN7, EUMELTFURN8, EUMELTFURN9

POLLUTION CONTROL EQUIPMENT: Two baghouses (East and West Baghouse)

I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Lead	0.02 pph	Test Protocol will specify averaging time	East baghouse	GC 13	R 336.2804, 40 CFR 52.21 (d)
2. Lead	0.01 pph	Test Protocol will specify averaging time	West baghouse	GC 13	R 336.2804, 40 CFR 52.21 (d)
3. PM	0.01 lb/1,000 lbs of exhaust gas on a dry gas basis	Test Protocol will specify averaging time	Each baghouse	GC 13	R 336.1331
4. PM	2.3 pph	Test Protocol will specify averaging time	Each baghouse	GC 13	R 336.1331
5. Copper	1 mg/dscm	Test Protocol will specify averaging time	Each baghouse	GC 13	R 336.1225
6. Zinc	33 mg/dscm	Test Protocol will specify averaging time	Each baghouse	GC 13	R 336.1225
7. Lead	5 mg/dscm	Test Protocol will specify averaging time	Each baghouse	GC 13	R 336.1225

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. No later than 60 days after issuance of this permit, the permittee shall submit to the AQD District Supervisor, for review and approval, a preventative maintenance / malfunction abatement plan (PM / MAP) for FGMELTFURN. After approval of the PM / MAP by the AQD District Supervisor, the permittee shall not operate FGMELTFURN unless the PM / MAP, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. At a minimum the plan shall include:
 - a) Identification of the equipment and, if applicable, air-cleaning device and the supervisory personnel responsible for overseeing the inspection, maintenance, and repair.
 - b) Description of the items or conditions to be inspected and frequency of the inspections or repairs.

- c) Identification of the equipment and, if applicable, air-cleaning device, operating parameters that shall be monitored to detect a malfunction or failure, the normal operating range of these parameters and a description of the method of monitoring or surveillance procedures
- d) Identification of the major replacement parts that shall be maintained in inventory for quick replacement
- e) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits

If the plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan for approval to the AQD District Supervisor. Should the AQD determine the PM / MAP to be inadequate, the AQD District Supervisor may request modification of the plan to address those inadequacies. **(R 336.1205, R 336.1225, R 336.1331, R 336.1910, R 336.1911, R 336.1912, R 336.2804, 40 CFR 52.21 (d))**

IV. DESIGN/EQUIPMENT PARAMETERS

- 1. The permittee shall not operate induction melting furnaces 7 and 8 (EUMELTFURN7 and EUMELTFURN8) in FGMELTFURN unless the east baghouse is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the baghouse includes maintaining the pressure drop in the range as specified by the manufacturer or as determined during performance testing. **(R 336.1205, R 336.1225, R 336.1331, R 336.1901, R 336.1910)**
- 2. The permittee shall not operate induction melting furnace 9 (EUMELTFURN9) in FGMELTFURN unless the west baghouse is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the baghouse includes maintaining the pressure drop in the range as specified by the manufacturer or as determined during performance testing. **(R 336.1205, R 336.1225, R 336.1331, R 336.1901, R 336.1910)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

- 1. The permittee shall maintain a log of all maintenance activities conducted according to the PM / MAP (pursuant to SC III.1). The permittee shall keep this log on file at the facility and make it available to the Department upon request. **(R 336.1205, R 336.1225, R 336.1331, R 336.1911, R 336.2804, 40 CFR 52.21 (d))**
- 2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the pressure drop across each baghouse in FGMELTFURN on a continuous basis when the associated induction melting furnaces are operating. **(R 336.1205, R 336.1225, R 336.1331, R 336.1901, R 336.1910)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted.

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVEBAGHOUSE	50	35.7	R 336.1331, R 336.2804, 40 CFR 52.21 (d)
2. SWWBAGHOUSE	60	40	R 336.1331, R 336.2804, 40 CFR 52.21 (d)

IX. OTHER REQUIREMENTS

NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

The following conditions apply Source-Wide to: FGFACILITY

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

NA

IX. OTHER REQUIREMENTS

1. The permittee shall comply with all provisions of the National Emission Standards for Hazardous Air Pollutants for Secondary Nonferrous Metals Processing Area Sources, 40 CFR Part 63, Subpart TTTTTT, as applicable to FGFACILITY. **(40 CFR Part 63, Subparts A and TTTTTT)**

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT
AIR QUALITY DIVISION
PERMIT EVALUATION FORM

PT# 16-11 Rev 0 Permit_Rvwr J. RATHBUN
Pmt ID No. 27031 Rev. Unit GMU Class 1
APPLICANT NAME EXTRUDED METALS, INC Site_Rvwr
State Reg. No. B1650 (New No. request date) / /

Site Owner: EXTRUDED METALS, INC.
Location of Source:
302 ASHFIELD ST
BELDING MI 48809

Co. Contact (810) 987-7770
ROBERT KARTANYS
EXTRUDED METALS INC
302 ASHFIELD STREET
BELDING MI 48809

County IONIA County No.34 District 1 Temp Site F Soil Remed F

Site Comments:

REASON FOR APPLICATION CHIP DRYERS, INDUCTION MELTERS, BAG HOUSES

INSTALLATION DATE: PROCESS EQUIPMENT / / CONTROL EQUIPMENT / /

RELATED PERMIT(S) 30-83B&C, 505-93, 281-86A VOIDS 30-83B&C 505-93 281-86A

POLLUTANTS NETTED OUT FROM PSD REVIEW NA

STATE/FED. AIR REG'S SOURCE IS SUBJECT TO? NSPS F, NESHAPS T, PSD F, Act 64 F

SIP Rule No.(s) 331, 910, 1804 Other 224, 225

OF OUT? F ENFORCEMENT? F


EPA NOTIFICATION REQUIRED? F DATE INFO SENT TO EPA? / /

OFFSETS PROVIDED? F IF YES, HOW MUCH AND FROM WHERE?
NA

App_rcvd 01/21/11 Log_date 01/24/11 Screened 01/24/11 Adm_Cmplt 01/21/11
Assigned 01/24/11 TecDetrmn 01/28/11 Tec_Cmplt 04/21/11 Site_Aprvd / /

PTI_Aprvd / / PTI_Denied / / PTI_Void / / PTI_Revokd / /
Total_days 0 Complete_days 0 Eval_days 0

Pmt_ToTox / / Pmt_FrTox / / PmtToMod 03/09/11 PmtFrMod 04/08/11
Add_Inf1 01/31/11 Co_Rspons1 02/22/11 Add_Inf2 04/15/11 Co_Rspons2 04/21/11
Draft_Pmt 04/15/11 Co_Accept 05/12/11 Scr_Letter / / To_Dist / /

Reviewed By: 

Date: 6-28-11

Approved By: 

Date: 6-28-11

PERMIT NO. YR.Suf.Sup#
16 11 0

10-18-11

PERMIT	No.	Yr.Suf.Sup.	ESTAB No.
	16	11	0
			B1650

DESCRIPTION OF SOURCE & RELATED CONTROL EQUIP./TECHNOLOGY

See file S:\PMT\EVAL\2011\16-11_Eval.doc.

A paper copy will be placed in the permit folder.

DESCRIPTION OF ANY REQUIRED MONITORING: (CEMS, PROCESS, CONTROL EQUIP.)

See file S:\PMT\EVAL\2011\16-11_Eval.doc.

A paper copy will be placed in the permit folder.

CONTROL EQUIPMENT BYPASS, IF ANY, & REASON WHEN BYPASS OCCURS:

See file S:\PMT\EVAL\2011\16-11_Eval.doc.

A paper copy will be placed in the permit folder.

PROCESS/CONTROL WASTE AND DISPOSAL

See file S:\PMT\EVAL\2011\16-11_Eval.doc.

A paper copy will be placed in the permit folder.

GENERAL COMMENTS

See file S:\PMT\EVAL\2011\16-11_Eval.doc.

A paper copy will be placed in the permit folder.

BASIS FOR RECOMMENDATION:

See file S:\PMT\EVAL\2011\16-11_Eval.doc.

A paper copy will be placed in the permit folder.

PERMIT No. Yr.Suf.Sup. ESTAB No.
 16 11 0 B1650

Equipment Description CHIP DRYERS AND MELT FURNACES
 SCC 1 3-04-999-99 SCC 2 - - - 0 SCC 3 - - - 0
 Cont. Code 17 Cont. Code 21 Cont. Code 1

STACK INFORMATION

Good Engr. Practice					Stack Information				
No.	Ht	Bldg	Bldg	Stack	Total	Act	Bldg	Lin Type	Diam or Dim
	(ft)	Ln	Wd	Ht	Ht	Ht			(in)
ECD	0.0	0.0	0.0	90.0	90.0	0.0		V	24.0
WCD	0.0	0.0	0.0	90.0	90.0	0.0		V	24.0
EBH	0.0	0.0	0.0	35.7	35.7	0.0		V	50.0
WBH	0.0	0.0	0.0	40.0	40.0	0.0		V	60.0

Stack Exit Info.					Map Coordinates			Plume
Vel(F/S)	Temp(F)	Flow(CFM)	Dir	Cap	Zone	Horizontal	Vertical	Ht (ft)
0.0	180.0	5500.0	U	F				0.0
0.0	180.0	5500.0	U	F				0.0
0.0	80.0	59991.0	U	F				0.0
0.0	80.0	59673.0	U	F				0.0

PERMIT No.	Yr.Suf.Sup.	ESTAB No.
16 11	0	B1650

Agreement on the Conditions.

DISTRICT:	PERSON Eric Grinstern	DATE	04/15/11
ENFORCEMENT:	PERSON Mike Kovalchick	DATE	04/15/11
APPLICANT:	PERSON Jeff Jaros (Consultant)	DATE	05/12/11

COORDINATION REQUIRED:		(UNITS, DIVISIONS, AGENCIES, ETC.)		
	PERSON	DATE	REQ RESPN	
	CONTACTED	CONTACTED	DATE	COMMENTS
DISTRICT		/ /	/ /	
ENFORCEMENT		/ /	/ /	
MODELING	Jim Haywood	03/09/11	/ /	04-08-11 completed
STACK SAMPLE		/ /	/ /	
TOXICS		/ /	/ /	
WMD		/ /	/ /	
SWQ		/ /	/ /	
ERD		/ /	/ /	
L&W MNGT		/ /	/ /	
GEO SURVEY		/ /	/ /	
LAW ENFORCE		/ /	/ /	

DRAFT

Permit No.: 16-11
 Company Name: EXTRUDED METALS, INC
 Engineer: JEFF RATHBUN
 Last Updated: 10/18/2011

SOURCE

This application is for an existing brass processing and extrusion process. The facility has had violations for particulate, lead and hydrogen chloride emissions. Currently, the facility is going through enforcement as well as working with Remediation Division to address soil contamination due to lead deposition. This application is being submitted to address the violations, specifically for the lead emissions which are causing a violation of the National Ambient Air Quality Standard (NAAQS) for lead (0.15 ug/m^3) and for combining the existing equipment at the facility under one permit. This permit application, along with the consent order, will address bringing the facility into compliance with all state and federal regulations.

EMISSION UNIT SUMMARY TABLE

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Flexible Group ID
EUECHIPDRYER	The east brass chip dryer with a cyclone, thermal oxidizer, precooler/wet scrubber and a demister for control. The chip dryer has a drying capacity of 20,000 pounds of brass turnings per hour.	FGCHIPDRYERS
EUWCHIPDRYER	The west brass chip dryer with a cyclone, thermal oxidizer, precooler/wet scrubber and a demister for control. The chip dryer has a drying capacity of 20,000 pounds of brass turnings per hour.	FGCHIPDRYERS
EUMELTFURN7	Induction melting furnace with associated pressurized holder and horizontal casters. The induction melting furnaces are controlled by the east baghouse.	FGMELTFURN
EUMELTFURN8	Induction melting furnace with associated pressurized holder and horizontal casters. The induction melting furnaces are controlled by the east baghouse.	FGMELTFURN
EUMELTFURN9	Induction melting furnace with associated pressurized holder and horizontal casters. The induction melting furnaces are controlled by the west baghouse.	FGMELTFURN

FLEXIBLE GROUP SUMMARY TABLE

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGCHIPDRYERS	East and west chip dryers. Each chip dryer has its own associated cyclone, thermal oxidizer, precooler/wet scrubber and demister for control.	EUECHIPDRYER, EUWCHIPDRYER
FGMELTFURN	Three induction melting furnaces and associated pressurized holder, three horizontal casters and two baghouses.	EUMELTFURN7, EUMELTFURN8, EUMELTFURN9
FGFACILITY	All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.	All

MONITORING

The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the temperature of the thermal oxidizer on a continuous basis when the associated chip dryer is operating.

The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the nozzle water pressure for the precooler/scrubber system when the associated chip dryer is operating.

The permittee shall monitor and record the pressure drop across each baghouse on a continuous basis when the associated induction melting furnaces are operating.

BYPASS

NA

WASTE DISPOSAL

All process waste shall be disposed of per regulations.

GENERAL COMMENTS

This application was submitted for the purpose of providing a demonstration that the facility emissions of lead are in compliance with the NAAQS for lead. The permit will also combine existing equipment currently covered by separate permits into one permit. Additionally, this permit will require the permittee to install controls on the idled east chip dryer that are equivalent or better than the controls currently installed on the west chip dryer.

The NAAQS demonstration provided by the applicant showed that the modeled impacts for lead emissions from the facility are less than the 0.15 ug/m³ at the currently allowed lead emission rates (permitted emission limits) of 0.2 lb/hr for the west chip dryer and 0.3 lb/hr for the east chip dryer. The modeling results are 0.123 ug/m³. The permittee will be required to raise the stacks for both chip dryers to 122 feet (prior to AERMOD change, stacks were modeled at 90 feet) and additional control will be required on the east chip dryer prior to start up. Once the east chip dryer is restarted, the applicant will have 90 days to test for particulate, lead, sulfuric acid and hydrogen chloride emissions and demonstrate compliance with the emission limits in the permit. The permittee will be required to test the chip dryers every five years to demonstrate on going compliance with the permitted limits.

Emissions:

This facility is located in an attainment area for all criteria pollutants but will be designated nonattainment for lead in the near future. Currently, the potential to emit for all criteria pollutants emitted from the facility are less than 100 tons per year, therefore, this facility is not subject to PSD or to the ROP requirements. However, this facility is one of the 28 source categories, so for future reference, if they do increase the potential emissions to greater than 100 tons per year for any criteria pollutant, the facility will be subject to PSD review.

CO = 25.1 TPY
NOx = 34.3 TPY
SO2 = 0.18 TPY

PM10 = 98.2 TPY
 PM2.5 = 98.2 TPY
 PM = 31.9 TPY
 Lead = 2.4 TPY
 H2SO4 = 1.8 TPY
 HCl = 0.9 TPY

The applicant is not asking to increase emissions over what was previously allowed, therefore, the previously reviewed TAC emissions are deemed acceptable (impacts likely would be lower due to taller stacks). A review was still done by the permit engineer to verify impacts are acceptable (see table below). This was done conservatively using generic lb/hr impacts and adding individual impacts from each source to come up with the overall impact.

Toxic Air Contaminant Impacts

CAS No.	Toxic Air Contaminant	Averaging Time	Screening Level Type	Screening Level ($\mu\text{g}/\text{m}^3$)	Pollutant Impact ($\mu\text{g}/\text{m}^3$)	% of Screening Level
7664-93-9	Sulfuric Acid	8-hr	ITSL	10	7.3	73%
7647-01-0	Hydrogen Chloride	1-hr	ITSL	2100	3.5	0.2%
7647-01-0	Hydrogen Chloride	Annual	ITSL	20	0.22	1%
7440-50-8	Copper	8-hr	ITSL	2	0.5*	25%
1314-13-2	Zinc	8-hr	ITSL	50	1.6*	3%

*Impacts are based on the most recent stack test results

Note: TAC impacts are likely lower than shown above because stack heights were increased from 90 feet to 122 feet but because previous TAC modeling passed, no further modeling was done.

The lead NAAQS was lowered from 1.5 $\mu\text{g}/\text{m}^3$ to 0.15 $\mu\text{g}/\text{m}^3$. The monitored lead in the area near the facility is showing exceedances above the new NAAQS. This area will be designated nonattainment for lead and an additional monitor will be installed at the new high impact location to determine if the lead emissions from the facility are below the NAAQS.

Background Information

Extruded Metals, Inc. operates a brass casting, extrusion and finishing plant located at 302 Ashfield Street in Belding, Michigan. This manufacturing plant is located on the northeast side of the city of Belding with the nearest homes located directly across the street to the east of the facility. There are approximately 40 homes located within 750 feet of the facility and over 200 homes located within a half-mile radius of the facility.

The facility produces brass rod for machining and forging applications. They currently operate two chip dryers and three induction melters which supply molten brass to three horizontal casters. The facility receives brass chips and scrap that are used in the production process. Prior to being loaded into the melting furnaces, the oil and moisture content of the chips is removed in the chip dryers. After drying, the brass chips are transferred to the induction melters where the chips are melted along with other brass scrap. Molten brass is then transferred into a either a pressurized holding furnace or holding chamber and then cast as brass logs in the horizontal casters. The brass logs are cut into billets which are then extruded and cold drawn

into brass rod. The brass rod are sent through a pickling process to remove metal oxides and is then shipped to customers or stored at the facility.

Emissions from the brass chip dryers are controlled by a cyclone, then a thermal oxidizer and finally the exhaust gases pass through a precooler/wet scrubber system with a demister before being discharged to the ambient air.

Emissions from the three melting furnaces, pressurized holder and three horizontal casters are controlled by two baghouses.

Proposed Facility and Present Air Quality

The PTI application, No 16-11, is for the addition of controls (modified scrubbers, mister nozzles and demisters) and taller stacks for the two chip dryers. These modifications are necessary to demonstrate compliance with the NAAQS for lead which was recently revised to a lower concentration. Currently, the facility is located in an area designated attainment for all criteria pollutants, but this area will be redesignated as nonattainment for lead based on recent DEQ monitoring results that show that the amount of lead in the air exceeds the revised NAAQS.

Pollutant Emissions

This facility is located in an attainment area for all criteria pollutants but will be designated nonattainment for lead in the near future. Currently, the potential to emit for all criteria pollutants emitted from the facility is less than 100 tons per year (tpy), therefore, this facility is not subject to the Prevention of Significant Deterioration (PSD) or to the Renewable Operating Permit (ROP) requirements.

The following table provides the potential to emit for each criteria pollutant:

EMISSION SUMMARY

Pollutant	Estimated Emissions (tpy)
Particulate Matter (PM)	31.9
PM10*	98.2
PM2.5**	98.2
Sulfur Dioxide (SO ₂)	0.18
Carbon Monoxide (CO)	25.1
Nitrogen Oxides (NO _x)	34.3
Lead	2.4
Sulfuric Acid Mist	1.8

* Particulate matter less than 10 microns in diameter

** Particulate matter less than 2.5 microns in diameter

Key Permit Review Issues

Staff evaluated the proposed project to identify all state rules and federal regulations which are, or may be, applicable. The tables in Appendix 1 summarize these rules and regulations.

- **Prevention of Significant Deterioration (PSD) Regulations** – The facility is one of the 28 source categories listed in the PSD regulations, therefore the PSD major source threshold is

100 tpy. The facility is not subject to PSD review for any criteria pollutant because the potential to emit of the facility is currently less than the PSD major source threshold. Once a source is major for a single criteria pollutant, it is major for other criteria pollutants at their significance level.

- **Federal NESHAP Regulations** - National Emission Standards for Hazardous Air Pollutants (NEHAP) were established under 40 CFR Part 61 or Part 63. The facility may be subject to the NESHAP for Secondary Nonferrous Metals Processing Area Sources, 40 CFR Part 63 Subpart TTTTTT.
- **Rule 224 T-BACT Analysis** – The two chip dryers are subject to the requirements of Rule 224, Best Available Control Technology for Toxic Air Contaminants (T-BACT). The two chip dryers are controlled by a cyclone, then a thermal oxidizer and finally the exhaust gases pass through a precooler/wet scrubber system with a demister. The controls meet the requirements of Rule 224.
- **Rule 225 Toxics Analysis** – The DEQ Rules for Air Pollution Control require the ambient air concentration of toxic air contaminants (TACs) be compared against health-based screening levels. AQD staff evaluated TAC impacts from the facility even though the facility is not changing any process equipment or requesting to increase emissions. The review found that all TACs show impacts less than the established health-based screening levels and will comply with the requirements of Rule 225. (SEE TABLE ABOVE FOR IMPACTS, Table is in Fact Sheet)
- **Criteria Pollutants Modeling Analysis** - Computer dispersion modeling was performed to predict the impacts of air emissions from lead. Lead emissions from the proposed facility were evaluated against the NAAQS. The NAAQS is intended to protect public health. The modeling showed the maximum 3-month rolling average impact, including the background concentration, to be 0.123 microgram per cubic meter which is below the NAAQS threshold of 0.15 microgram per cubic meter for lead. The facility will be required to raise the stacks to 122 feet to meet this standard.
- **Additional Impact Analysis** – An additional impact analysis was performed by the applicant to evaluate the impacts from the proposed project for soils (deposition modeling).

The proposed lead emissions have been modeled to meet the NAAQS for lead. As stated above, that standard is protective of the public health, particularly the critical effect of children's lead exposure and potential effects on intelligence and behavior. The air quality standard was set at a level that accounted for inhalation exposure as well as deposition to the ground, with subsequent children's exposure via topsoil and house dust. However, elevated lead levels in the topsoil in the Belding area is currently under investigation by the DEQ and Extruded Metals, so there may be a concern that future lead emissions could add to the topsoil lead level. Therefore, the applicant provided a modeling study to characterize the potential future lead deposition impact in the Belding area. Consistent with DEQ and EPA guidance, the applicant estimated that the point of highest lead deposition impact may have an additional 9.76 parts per million (ppm) of lead in the topsoil after 30 years of accumulated impact from facility emissions at the maximum permitted emission rate. For perspective, the DEQ residential topsoil cleanup standard for areas where children may play is set at 400 ppm, to provide protection to children from harmful levels of exposure.

Key Aspects of Draft Permit Conditions

- **Emission Limits** – The draft permit includes PM, lead, sulfuric acid and hydrogen chloride emission limits for the two chip dryers and PM, lead, copper and zinc emission limits for the three melt furnaces. Additionally, the draft permit requires each of the two chip dryers to be operated with a cyclone, thermal oxidizer and a precooler/wet scrubber system with a demister to limit the PM, lead, sulfuric acid and hydrogen chloride emissions. The three melt furnaces are required to be operated with baghouses to control PM, lead, copper and zinc emissions.
- **Process/Operational Restrictions** - Within 60 days after issuance of the permit, the permittee must submit a malfunction abatement/operation and preventative maintenance plan for the chip dryers and the melt furnaces. Once the plan is approved, the facility shall not operate the equipment unless the plan is implemented and maintained.
- **Federal Regulations** – The proposed facility may be subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Secondary Nonferrous Metals Processing Area Sources, 40 CFR Part 63 Subpart TTTTTT. The permit specifies that permittee must be in compliance with this NESHAP, as applicable.
- **Testing & Monitoring Requirements** – The draft permit includes the following requirements for the equipment at the facility:
 - Two chip dryers:
 - Verify lead, PM, sulfuric acid, and hydrogen chloride emission rates through performance testing once every five years for the west chip dryer.
 - Verify lead, PM, sulfuric acid, and hydrogen chloride emission rates through performance testing within 90 days after restart of the east chip dryer and once every five years thereafter.
 - Monitor and record the temperature of the thermal oxidizer on a continuous basis when the associated chip dryer is operating.
 - Once each shift, the permittee shall record the nozzle water pressure for the precooler/scrubber system when the associated chip dryer is operating.
 - Three melt furnaces:
 - Monitor and record the pressure drop across each baghouse on a continuous basis when the associated induction melting furnaces are operating.


RECOMMENDATIONS

Recommend 30 day comment period and hearing.

30 day comment period ended on October 10, 2011 at the conclusion of the hearing. Seven comments were received from the two individuals that spoke at the hearing, no other comments were received during the comment period or at the hearing. No changes were made to the draft conditions based on the comments that were received, however, two monitoring/recordkeeping

conditions were added and one was modified to clarify the monitoring and recordkeeping requirements for the scrubber systems on the chip dryers.

Recommend approval with the condition changes.

Peer Reviewer:  Date: 10-20-11
Andy Drury

Appendix 4

Consent Order

A.4. Consent Order 9-2011

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF THE DIRECTOR

In the matter of administrative proceedings)
against EXTRUDED METALS, INC., a)
corporation organized under the laws of the)
State of Michigan and doing business at 302)
Ashfield Street, City of Belding, County of)
Ionia, State of Michigan)

AQD No. 9-2011

SRN: B1650

STIPULATION FOR ENTRY OF FINAL ORDER
BY CONSENT

This proceeding resulted from allegations by the Michigan Department of Environmental Quality (MDEQ) Air Quality Division (AQD) against Extruded Metals, Inc., (Company), a Michigan corporation located at 302 Ashfield Street in the City of Belding, County of Ionia, State of Michigan, with State Registration Number (SRN) B1650. The MDEQ alleges that the Company has violated Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, Michigan Administrative Code (MAC), 2002 AACRS, R 336.336.1331 (Rule 331) and Permit to Install (PTI) No. 505-93. Specifically, the MDEQ alleges that the Company has exceeded emission limits for lead, particulate matter and hydrogen chloride for the West Chip Dryer as cited herein and in the Violation Notice from the MDEQ dated December 28, 2009. The Company and MDEQ stipulate to the termination of this proceeding by entry of a Stipulation for Entry of a Final Order by Consent (Consent Order).

The Company and MDEQ stipulate as follows:

1. The Natural Resources and Environmental Protection Act, 1994 PA 451 (Act 451), MCL 324.101 *et seq.* is an act that controls pollution to protect the environment and natural resources in the State.
2. Article II, Pollution Control, Part 55 of Act 451 (Part 55), MCL 324.5501 *et seq.* provides for air pollution control regulations in this State.
3. The MDEQ was created as a principal department within the Executive Branch of the State of Michigan pursuant to Executive Order 2011-1 and has all statutory authority, powers, duties, functions and responsibilities to administer and enforce all provisions of Part 55.

4. The Director has delegated authority to the Chief of the AQD (AQD Chief) to enter into this Consent Order.
5. The termination of this matter by a Consent Order pursuant to Section 5528 of Part 55 is proper and acceptable.
6. The Company and the MDEQ agree that the signing of this Consent Order is for settlement purposes only and does not constitute an admission by the Company that the law has been violated.
7. This Consent Order becomes effective on the date of execution (effective date of this Consent Order) by the AQD Chief.
8. The Company shall achieve compliance with the aforementioned regulations in accordance with the requirements contained in this Consent Order.

COMPLIANCE PROGRAM AND IMPLEMENTATION SCHEDULE

9. A. Permit

PTI 16-11 and any subsequent permit revision shall be attached hereto as Exhibit A and made enforceable as part of this Consent Order.

B. Final Emission Limitations

On and after the effective date of this Consent Order, the lead, particulate matter and hydrogen chloride emission rates from the West Chip Dryer shall not exceed the emission limits specified for Flexible Group FGCHIPDRYERS in PTI 16-11 or any subsequent permit revision.

C. Preventative Maintenance / Malfunction Abatement Plan (PM/MAP)

1. Within 60 days after issuance of PTI 16-11, the Company shall submit to the AQD Grand Rapids District Supervisor for review, a PM/MAP for FGCHIPDRYERS as outlined in PTI 16-11.

2. After approval of the PM /MAP by the AQD Grand Rapids District Supervisor, the Company shall not operate FGCHIPDRYERS unless the PM /MAP, or an alternate plan approved by the AQD Grand Rapids District Supervisor is implemented and maintained. When approved, the PM /MAP shall be attached as Exhibit B, incorporated by reference and made an enforceable part of this Consent Order.

3. Any acceptable changes or updates to the PM/MAP, as reasonably requested by the Company shall be promptly submitted to the AQD Grand Rapids District Supervisor. The revised PM/MAP shall replace the PM/MAP referred to in paragraph 9.C.2 and shall be attached and become an enforceable part of this Consent Order.

GENERAL PROVISIONS

10. This Consent Order in no way affects the Company's responsibility to comply with any other applicable state and federal, or local laws or regulations, including without limitation, any amendments to the federal Clean Air Act, 42 USC 7401 *et seq.*, Act 451, Part 55 or their rules and regulations, or to the State Implementation Plan.

11. This Consent Order constitutes a civil settlement and satisfaction as to the resolution of the violations specifically addressed herein; however, it does not resolve any criminal action that may result from these same violations.

12. Within thirty (30) days after the effective date of this Consent Order, the Company shall pay to the General Fund of the State of Michigan, in the form of a check made payable to the "State of Michigan" and delivered to the Michigan Department of Environmental Quality, Financial and Business Services Division, Revenue Control, P.O. Box 30657, Lansing, Michigan 48909-8157, a settlement amount of \$ 176,000 which includes AQD costs for investigation and enforcement. This total settlement amount shall be paid within thirty (30) days of the effective date of this Consent Order. To ensure proper credit, all payments made pursuant to this Consent Order shall include the Agreement Identification No. AQD 1205 on the face of the check. This settlement amount is in addition to any fees, taxes, or other fines that may be imposed on the Company by law.

13. On and after the effective date of this Consent Order, if the Company fails to comply with paragraph 9B of this Consent Order, the Company is subject to stipulated fines of up to \$5000 per violation per day. On and after the effective date of this Consent Order, if the Company fails to comply with paragraph 9C of this Consent Order, the Company is subject to stipulated fines of up to \$1000 per violation per day. On and after the effective date of this Consent Order, if the Company fails to comply with any other provision of this Consent Order, the Company is subject to a stipulated fine of up to \$500.00 per violation. The amount of the stipulated fines imposed pursuant to this paragraph shall be

within the discretion of the MDEQ. Stipulated fines submitted under this Consent Order shall be by check, payable to the State of Michigan within thirty (30) days of written demand and shall be delivered to the Michigan Department of Environmental Quality, Financial and Business Services Division, Revenue Control, P.O. Box 30657, Lansing, Michigan 48909-8157. To ensure proper credit, all payments shall include the Agreement Identification No. AQD 1205-S on the face of the check. Payment of stipulated fines shall not alter or modify in any way the Company's obligation to comply with the terms and conditions of this Consent Order.

14. The AQD, at its discretion, may seek stipulated fines or statutory fines for any violation of this Consent Order which is also a violation of any provision of applicable federal and state law, rule, regulation, permit, or MDEQ administrative order. However, the AQD is precluded from seeking both a stipulated fine under this Consent Order and a statutory fine for the same violation.

15. To ensure timely payment of the settlement amount assessed in paragraph 12 and any stipulated fines assessed pursuant to paragraph 13 of this Consent Order, the Company shall pay an interest penalty to the State of Michigan each time it fails to make a complete or timely payment under this Consent Order. The interest penalty shall be determined at a rate of twelve percent (12%) per year compounded annually, using the full increment of amount due as principal, calculated from the due date specified in this Consent Order until the date that delinquent payment is finally paid in full. Payment of an interest penalty by the Company shall be made to the State of Michigan in accordance with paragraph 12 of this Consent Order. Interest payments shall be applied first towards the most overdue amount or outstanding interest penalty owed by the Company before any remaining balance is applied to subsequent payment amount or interest penalty.

16. The Company agrees not to contest the legal basis for the settlement amount assessed pursuant to paragraph 12. The Company also agrees not to contest the legal basis for any stipulated fines assessed pursuant to paragraph 13 of this Consent Order, but reserves the right to dispute in a court of competent jurisdiction the factual basis upon which a demand by MDEQ of stipulated fines is made. In addition, the Company agrees that said fines have not been assessed by the MDEQ pursuant to Section 5529 of Part 55 and therefore are not reviewable under Section 5529 of Part 55.

17. This compliance program is not a variance subject to the 12 month limitation specified in Section 5538 of Part 55.

18. This Consent Order shall remain in full force and effect for a period of at least three (3) years. Thereafter, the Consent Order shall terminate only upon written notice of termination issued by the AQD Chief. Prior to issuance of a written notice of termination, the Company shall submit a request, to the AQD Chief at the Michigan Department of Environmental Quality, Air Quality Division, P.O. Box 30260, Lansing, Michigan 48909-7760, consisting of a written certification that the Company has fully complied with all the requirements of this Consent Order and has made all payments including all stipulated fines required by this Consent Order. Specifically, this certification shall include: (i) the date of compliance with each provision of the compliance program and the date any payments or stipulated fines were paid; (ii) a statement that all required information has been reported to the AQD Grand Rapids District Supervisor; (iii) confirmation that all records required to be maintained pursuant to this Consent Order are being maintained at the facility; and, (iv) such information as may be requested by the AQD Chief.

19. In the event Extruded Metals, Inc. sells or transfers the facility, with SRN: B1650, it shall advise any purchaser or transferee of the existence of this Consent Order in connection with such sale or transfer. Within thirty (30) calendar days, the Company shall also notify the AQD Grand Rapids District Supervisor, in writing, of such sale or transfer, the identity and address of any purchaser or transferee, and confirm the fact that notice of this Consent Order has been given to the purchaser and/or transferee. As a condition of the sale, Extruded Metals, Inc. must obtain the consent of the purchaser and/or transferee, in writing, to assume all of the obligations of this Consent Order. A copy of that agreement shall be forwarded to the AQD Grand Rapids District Supervisor within thirty (30) days of assuming the obligations of this Consent Order.

20. Prior to the effective date of this Consent Order and pursuant to the requirements of Sections 5511 and 5528(3) of Part 55, the public was notified of a 30-day public comment period and was provided the opportunity for a public hearing.

21. Section 5530 of Part 55 may serve as a source of authority but not a limitation under which the Consent Order may be enforced. Further, Part 17 of Act 451 and all other applicable laws and any other legal basis or applicable statute may be used to enforce this Consent Order.

22. The Company hereby stipulates that entry of this Consent Order is a result of an action by MDEQ to resolve alleged violations of its facility located at 302 Ashfield Street, in Belding, Michigan. The Company further stipulates that it will take all lawful actions necessary to fully comply with this

Consent Order, even if the Company files for bankruptcy in the future. The Company will not seek discharge of the settlement amount and any stipulated fines imposed hereunder in any future bankruptcy proceedings, and the Company will take necessary steps to ensure that the settlement amount and any future stipulated fines are not discharged. The Company, during and after any future bankruptcy proceedings, will ensure that the settlement amount and any future stipulated fines remain an obligation to be paid in full by the Company to the extent allowed by applicable bankruptcy law.

The undersigned certifies that he/she is fully authorized by the Company to enter into this Consent Order and to execute and legally bind the Company to it.

EXTRUDED METALS, INC.

Gray Wilkerson
Print Name and Title
Gray Wilkerson
Signature
Date: 11/08/2011

The above signatory subscribed and sworn to before me this 8th day of November, 2011.



Mara E Seaton
Notary Public

Approved as to Content:

My Comm. Expires
August 15, 2015

Approved as to Form:

G. Vinson Hellwig
G. Vinson Hellwig, Chief
AIR QUALITY DIVISION
DEPARTMENT OF
ENVIRONMENTAL QUALITY

Neil Gordon
Neil Gordon, Section Head
ENVIRONMENTAL REGULATION SECTION
ENVIRONMENT, NATURAL RESOURCES,
AND AGRICULTURE DIVISION
DEPARTMENT OF ATTORNEY GENERAL

Dated: 12/1/11

Dated: 11/21/2011

FINAL ORDER

The Chief of the Air Quality Division having had opportunity to review the Consent Order and having been delegated authority to enter into Consent Orders by the Director of the Michigan Department of Environmental Quality pursuant to the provisions of Part 55 of Act 451 and otherwise being fully advised on the premises,

HAS HEREBY ORDERED that the Consent Order is approved and shall be entered in the record of the MDEQ as a Final Order.

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY


G. Vinson Hellwig, Chief
Air Quality Division

Effective Date: 12/1/11

Appendix 5

Public Notice Documents

- A.5.1 Public Participation Documents for PTI No. 16-11
- A.5.2 Extruded Metals – Response to Comments
- A.5.3 Public Hearing Notice for PTI No. 16-11 and Consent Order 9-2011
- A.5.4 Letter to Public for PTI No. 16-11 and Consent Order 9-2011
- A.5.5 SIP Public Participation Documents - to be added

STATE OF MICHIGAN
Rick Snyder, Governor



DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY DIVISION
CONSTITUTION HALL • 525 WEST ALLEGAN STREET • P.O. BOX 30260 • LANSING, MICHIGAN 48909-7760
www.michigan.gov/air

PUBLIC PARTICIPATION DOCUMENTS

For
Extruded Metals, Inc.
(a Mueller Industries Co.)
302 Ashfield Street
Belding, Michigan

PERMIT APPLICATION NUMBER

16-11

AUGUST 29, 2011

FACT SHEET
AUGUST 29, 2011

Purpose and Summary

The Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD), is proposing to act on Permit to Install (PTI) application No. 16-11 from Extruded Metals, Inc., a Mueller Industries Co. (hereinafter referred to as "Extruded Metals, Inc.") The permit application is for demonstrating compliance with the revised National Ambient Air Quality Standard (NAAQS) for lead for the existing brass processing and extrusion processes. The existing facility is subject to permitting requirements of the Department's Rules for Air Pollution Control and federal regulations.

Additionally, the AQD is proposing entry of a consent order with Extruded Metals, Inc. to resolve alleged air pollution violations of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451) and PTI No. 505-93. Specifically, the facility has exceeded the emission limits for lead, particulate matter and hydrogen chloride for the West Chip Dryer as contained in PTI No. 505-93. Compliance testing conducted on September 28-30, 2009, at the request of the AQD, documented the emission limit exceedances.

Prior to acting on this application, the AQD is holding a public comment period and a public hearing to allow all interested parties the opportunity to comment on the proposed PTI and consent order. All relevant information received during the comment period and hearing will be considered by the decision maker prior to taking final action on the application.

Background Information

Extruded Metals, Inc. operates a brass casting, extrusion and finishing plant located at 302 Ashfield Street in Belding, Michigan. This manufacturing plant is located on the northeast side of the city of Belding with the nearest homes located directly across the street to the east of the facility. There are approximately 40 homes located within 750 feet of the facility and over 200 homes located within a half-mile radius of the facility.

The facility produces brass rod for machining and forging applications. They currently operate two chip dryers and three induction melters which supply molten brass to three horizontal casters. The facility receives brass chips and scrap that are used in the production process. Prior to being loaded into the melting furnaces, the oil and moisture content of the chips is removed in the chip dryers. After drying, the brass chips are transferred to the induction melters where the chips are melted along with other brass scrap. Molten brass is then transferred into either a pressurized holding furnace or holding chamber and then cast as brass logs in the horizontal casters. The brass logs are cut into billets which are then extruded and cold drawn into brass rod. The brass rod are sent through a pickling process to remove metal oxides and is then shipped to customers or stored at the facility.

Emissions from the brass chip dryers are controlled by a cyclone, then a thermal oxidizer and finally the exhaust gases pass through a precool/wet scrubber system with a demister before being discharged to the ambient air.

Emissions from the three melting furnaces, pressurized holder and three horizontal casters are controlled by two baghouses.

As required by the revised NAAQS for lead, published in the Federal Register on November 12, 2008, sources emitting lead greater than 1.0 ton per year are required to have an air quality monitor placed near the facility. Extruded Metals, Inc. exceeded the monitoring requirement threshold. Therefore, an ambient air monitor was placed adjacent to the facility by the AQD and became operational on January 1, 2010. Air samples collected by the monitor have recorded an exceedance of the revised NAAQS for lead of 0.15 micrograms per cubic meter over a three-month average.

Significant Dates

November 19, 2008	The AQD requested that Extruded Metals, Inc. conduct emission compliance testing on the West Chip Dryer and Induction Melter No. 8. The request was made because the AQD received citizen complaints and observed opacity and odors and because of the period of time since the last compliance test (1992).
February 18, 2009	A meeting between the AQD and Extruded Metals, Inc. was held at the request of the company to discuss stack testing. The facility had dramatically decreased operations and requested an extension to perform stack testing. Since the decrease in operations appeared to impact the ability to perform testing that would be representative of normal operations, an extension was granted. The testing deadline was extended to September 20, 2009. The facility also indicated that they had switched operations from Induction Melter No. 8 to Induction Melter No. 7.
September 28-30, 2009	Extruded Metals, Inc. conducted compliance testing on the West Chip Dryer and Induction Melter No. 7.
November 25, 2009	The AQD received the results of the compliance testing showing that the West Chip Dryer was violating the permitted emission limits for lead, particulate matter, and hydrogen chloride.
December 11, 2009	A quality assurance audit of compliance test report was completed by the AQD confirming non-compliance with the West Chip Dryer emission limits.
December 28, 2009	A Violation Notice (VN) was issued to Extruded Metals, Inc. for emission limit exceedances.
January 14, 2010	The AQD received Extruded Metals, Inc.'s response to the VN issued on December 28, 2009. The response outlined actions taken by the facility to bring the West Chip Dryer into compliance with emission limits. The facility proposed retesting on April 15, 2010, which was subsequently delayed twice until July 14, 2010, to allow for new burners and control equipment modifications.

June 1, 2010	Extruded Metals, Inc. conducted preliminary testing (testing not conducted according to AQD protocol) that showed they were complying with the lead emission limits but were still exceeding the particulate matter and hydrogen chloride emission limits.
June 23, 2010	A meeting between Extruded Metals, Inc. and the AQD was held at which time they proposed to install an enhanced scrubber system on the West Chip Dryer to bring the unit into compliance with permit emission limits. The project would take approximately 12 weeks to complete. Extruded Metals, Inc. proposed to retest the unit upon completion of the enhanced scrubber project. The AQD informed Extruded Metals, Inc. that compliance testing would also need to be performed on the East Chip Dryer. Extruded Metals, Inc. agreed to perform minor upgrades to the control system on the East Chip Dryer within two weeks and install an enhanced scrubber system upon completing installation and verifying efficiency of the control on the West Chip Dryer.
July 19, 2010	The AQD sent a letter to Extruded Metals, Inc. requesting compliance testing be conducted on the East Chip Dryer within 60 days to determine if the East Chip Dryer was also exceeding permitted emission limits.
July 23, 2010	District refers the case for escalated enforcement action.
August 9, 2010	Extruded Metals, Inc. discontinued operations of the East Chip Dryer instead of conducting the testing requested on July 19, 2010, and agreed not to restart the dryer unless an upgraded control system was installed and emissions testing is conducted to verify compliance with applicable emission limits.
September 9, 2010	An initial enforcement meeting was held between Extruded Metals, Inc. and the AQD.
September 20, 2010	Extruded Metals, Inc. completed installation of an enhanced scrubber system on the West Chip Dryer to reduce air emissions.
September 23, 2010	The MDEQ held a public meeting in Belding to inform residents about the lead emission exceedances and actions being taken to reduce lead in the air in Belding.
October 1, 2010	Extruded Metals, Inc. conducted emissions testing on the West Chip Dryer. Results of the testing showed compliance with the permitted emission limits for lead, particulate matter and hydrogen chloride.
November 4-5, 2010	Extruded Metals, Inc. conducted emissions testing on the East and West Baghouses which control emissions from the three brass melting furnaces at the facility. Results of the testing showed compliance with the permitted emission limits.

January 12, 2011	A public meeting was held by the MDEQ to update residents on lead in the air and soils and actions being taken to address exceedances.
January 21, 2011	Extruded Metals, Inc. submits PTI application No. 16-11 to the AQD to resolve the alleged violations.
January 28, 2011	The United States Environmental Protection Agency (EPA) sends a Finding of Violation letter to Extruded Metals, Inc. for alleged violations of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Secondary Nonferrous Metals Processing Area Sources at 40 C.F.R. Part 63, Subpart TTTTTT.
June 2, 2011	Extruded Metals, Inc. agrees to enter into a proposed Consent Order to resolve the violations alleged by the MDEQ.

Compliance Issues

Extruded Metals, Inc.'s facility exceeded the West Chip Dryer emission limits for lead, hydrogen chloride, and particulate matter contained in PTI No. 505-93 as documented in stack testing performed on September 28-30, 2009.

In addition to the exceedances of the permitted emission limits for the West Chip Dryer, an air quality monitor was installed by the AQD adjacent to the facility as required by the revised NAAQS for lead issued in November 2008. The air monitor recorded three-month average exceedances of the NAAQS for lead from April 2010 through October 2010.

Proposed Facility and Present Air Quality

The PTI application, No. 16-11, is for the addition of controls (modified scrubbers, mister nozzles and demisters) and taller stacks for the two chip dryers. These modifications are necessary to demonstrate compliance with the NAAQS for lead which was recently revised to a lower concentration. Currently, the facility is located in an area designated attainment for all criteria pollutants, but this area will be redesignated as nonattainment for lead based on recent MDEQ monitoring results that show that the amount of lead in the air exceeds the revised NAAQS.

Pollutant Emissions

This facility is located in an attainment area for all criteria pollutants but will be designated nonattainment for lead in the near future. Currently, the potential to emit for all criteria pollutants emitted from the facility is less than 100 tons per year (tpy), therefore, this facility is not subject to the Prevention of Significant Deterioration (PSD) or to the Renewable Operating Permit (ROP) requirements.

The following table provides the potential to emit for each criteria pollutant:

EMISSION SUMMARY	
Pollutant	Estimated Emissions (tpy)
Particulate Matter (PM)	31.9
PM10*	98.2
PM2.5**	98.2
Sulfur Dioxide (SO ₂)	0.18
Carbon Monoxide (CO)	25.1
Nitrogen Oxides (NO _x)	34.3
Lead	2.4
Sulfuric Acid Mist	1.8

* Particulate matter less than 10 microns in diameter

** Particulate matter less than 2.5 microns in diameter

Key Permit Review Issues

Staff evaluated the proposed project to identify all state rules and federal regulations which are, or may be, applicable. The tables in Appendix 1 summarize these rules and regulations.

- **Prevention of Significant Deterioration (PSD) Regulations** – The facility is one of the 28 source categories listed in the PSD regulations, therefore the PSD major source threshold is 100 tpy. The facility is not subject to PSD review for any criteria pollutant because the potential to emit of the facility is currently less than the PSD major source threshold. Once a source is major for a single criteria pollutant, it is major for other criteria pollutants at their significance level.
- **Federal NESHAP Regulations** - National Emission Standards for Hazardous Air Pollutants (NESHAP) were established under 40 CFR Part 61 or Part 63. The facility may be subject to the NESHAP for Secondary Nonferrous Metals Processing Area Sources, 40 CFR Part 63 Subpart TTTTTT.
- **Rule 224 T-BACT Analysis** – The two chip dryers are subject to the requirements of Rule 224, Best Available Control Technology for Toxic Air Contaminants (T-BACT). The two chip dryers are controlled by a cyclone, then a thermal oxidizer and finally the exhaust gases pass through a precooler/wet scrubber system with a demister. The controls meet the requirements of Rule 224.
- **Rule 225 Toxics Analysis** – The MDEQ Rules for Air Pollution Control require the ambient air concentration of toxic air contaminants (TACs) be compared against health-based screening levels. AQD staff evaluated TAC impacts from the facility even though the facility is not changing any process equipment or requesting to increase emissions. The review found that all TACs show impacts less than the established health-based screening levels and will comply with the requirements of Rule 225.

Toxic Air Contaminant Impacts

CAS No.	Toxic Air Contaminant	Averaging Time	Screening Level Type	Screening Level ($\mu\text{g}/\text{m}^3$)	Pollutant Impact ($\mu\text{g}/\text{m}^3$)	% of Screening Level
7664-93-9	Sulfuric Acid	8-hr	ITSL	10	7.3	73%
7647-01-0	Hydrogen Chloride	1-hr	ITSL	2100	3.5	0.2%
7647-01-0	Hydrogen Chloride	Annual	ITSL	20	0.22	1%
7440-50-8	Copper	8-hr	ITSL	2	0.5	25%
1314-13-2	Zinc	8-hr	ITSL	50	1.6	3%

- **Criteria Pollutants Modeling Analysis** - Computer dispersion modeling was performed to predict the air impacts of lead emissions. Lead emissions from the proposed facility were evaluated against the NAAQS. The NAAQS is intended to protect public health. The modeling showed the maximum 3-month rolling average impact, including the background concentration, to be 0.123 microgram per cubic meter which is below the NAAQS of 0.15 microgram per cubic meter for lead. The facility will be required to raise the stacks for the two chip dryers to 122 feet to meet this standard.
- **Additional Impact Analysis** – An additional impact analysis was performed by the applicant to evaluate the impacts from the proposed project for soils (deposition modeling).

The proposed lead emissions have been modeled to meet the NAAQS for lead. As stated above, that standard is protective of the public health, particularly the critical effect of children's lead exposure and potential effects on intelligence and behavior. The air quality standard was set at a level that accounted for inhalation exposure as well as deposition to the ground, with subsequent children's exposure via topsoil and house dust. However, elevated lead levels in the topsoil in the Belding area are currently under investigation by the MDEQ and Extruded Metals, so there may be a concern that future lead emissions could add to the topsoil lead level. Therefore, the applicant provided a modeling study to characterize the potential future lead deposition impact in the Belding area. Consistent with MDEQ and EPA guidance, the applicant estimated that the point of highest lead deposition impact may have an additional 9.76 parts per million (ppm) of lead in the topsoil after 30 years of accumulated impact from facility emissions at the maximum permitted emission rate. For perspective, the MDEQ residential topsoil cleanup standard for areas where children may play is set at 400 ppm, to provide protection to children from harmful levels of exposure.

Key Aspects of Draft Permit Conditions

- **Emission Limits** – The draft permit includes PM, lead, sulfuric acid and hydrogen chloride emission limits for the two chip dryers and PM, lead, copper and zinc emission limits for the three melt furnaces. Additionally, the draft permit requires each of the two chip dryers to be operated with a cyclone, thermal oxidizer and a precooler/wet scrubber system with a demister to limit the PM, lead, sulfuric acid and hydrogen chloride emissions. The three melt furnaces are required to be operated with baghouses to control PM, lead, copper and zinc emissions.
- **Process/Operational Restrictions** - Within 60 days after issuance of the permit, the permittee must submit a malfunction abatement/operation and preventative maintenance

plan for the chip dryers and the melt furnaces. Once the plan is approved, the facility shall not operate the equipment unless the plan is implemented and maintained.

- **Federal Regulations** – The facility may be subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Secondary Nonferrous Metals Processing Area Sources, 40 CFR Part 63 Subpart TTTTTT. The permit specifies that permittee must be in compliance with this NESHAP, as applicable.
- **Testing & Monitoring Requirements** – The draft permit includes the following requirements for the equipment at the facility:
 - Two chip dryers:
 - Verify lead, PM, sulfuric acid, and hydrogen chloride emission rates through performance testing once every five years for the west chip dryer.
 - Verify lead, PM, sulfuric acid, and hydrogen chloride emission rates through performance testing within 90 days after restart of the east chip dryer and once every five years thereafter.
 - Monitor and record the temperature of the thermal oxidizer on a continuous basis when the associated chip dryer is operating.
 - Once each shift, the permittee shall record the nozzle water pressure for the precooler/scrubber system when the associated chip dryer is operating.
 - Three melt furnaces:
 - Monitor and record the pressure drop across each baghouse on a continuous basis when the associated induction melting furnaces are operating.

Compliance Program

Under the agreed upon terms of the proposed consent order, Extruded Metals, Inc. will comply with proposed PTI application No. 16-11 and made enforceable under the proposed consent order. The proposed consent order incorporates a settlement amount of \$176,000.00 and stipulated penalties of \$500.00 to \$5,000.00 per violation per day for any future noncompliance of the proposed consent order.

Conclusion and Recommendation

AQD staff believe that the proposed consent order, as drafted, contains an appropriate compliance program for resolution of the alleged federal and state air quality violation. AQD staff recommend that the proposed consent order be entered into unless substantive adverse public comments are received during the public comment period.

Additionally, based on the analyses conducted to date, AQD staff concludes that the proposed project would comply with all applicable state and federal air quality requirements. AQD staff also concludes that this project, as proposed, would not violate the federal National Ambient Air Quality Standards or the state and federal PSD increments.

Based on these conclusions, AQD staff has developed draft permit terms and conditions which would ensure that the proposed facility design and operation are enforceable and that sufficient

monitoring, recordkeeping, and reporting would be performed by the applicant to determine compliance with these terms and conditions. If the permit application is deemed approvable, the delegated decision maker may determine a need for additional or revised conditions to address issues raised during the public participation process.

If you would like additional information about the proposed permit, please contact Mr. Jeff Rathbun, AQD, at 517-241-8072. If you would like additional information about the proposed consent order, please contact Mr. Mike Kovalchick, AQD, at 517-335-6343.

Appendix 1
STATE AIR REGULATIONS

State Rule	Description of State Air Regulations
R 336.1201	Requires an Air Use Permit for new or modified equipment that emits, or could emit, an air pollutant or contaminant. However, there are other rules that allow smaller emission sources to be installed without a permit (see Rules 336.1279 through 336.1290 below). Rule 336.1201 also states that the Department can add conditions to a permit to assure the air laws are met.
R 336.1205	Outlines the permit conditions that are required by the federal Prevention of Significant Deterioration (PSD) Regulations and/or Section 112 of the Clean Air Act. Also, the same types of conditions are added to their permit when a plant is limiting their air emissions to legally avoid these federal requirements. (See the Federal Regulations table for more details on PSD.)
R 336.1224	New or modified equipment that emits toxic air contaminants must use the Best Available Control Technology for Toxics (T-BACT). The T-BACT review determines what control technology must be applied to the equipment. A T-BACT review considers energy needs, environmental and economic impacts, and other costs. T-BACT may include a change in the raw materials used, the design of the process, or add-on air pollution control equipment. This rule also includes a list of instances where other regulations apply and T-BACT is not required.
R 336.1225 to R 336.1232	The ambient air concentration of each toxic air contaminant emitted from the project must not exceed health-based screening levels. Initial Risk Screening Levels (IRSL) apply to cancer-causing effects of air contaminants and Initial Threshold Screening Levels (ITSL) apply to non-cancer effects of air contaminants. These screening levels, designed to protect public health and the environment, are developed by Air Quality Division toxicologists following methods in the rules and U.S. EPA risk assessment guidance.
R 336.1279 to R 336.1290	These rules list equipment to processes that have very low emissions and do not need to get an Air Use permit. However, these sources must meet all requirements identified in the specific rule and other rules that apply.
R 336.1299(2)(b)	Adopts by reference the provisions of 40 CFR 63.40 to 63.44 (2002) and 40 CFR 63.50 to 63.56 (2002), the federal hazardous air pollutant regulations governing constructed or reconstructed major sources.
R 336.1301	Limits how air emissions are allowed to look at the end of a stack. The color and intensity of the color of the emissions is called opacity.
R 336.1331	The particulate emission limits for certain sources are listed. These limits apply to both new and existing equipment.
R 336.1370	Material collected by air pollution control equipment, such as dust, must be disposed of in a manner, which does not cause more air emissions.
R 336.1401 and R 336.1402	Limit the sulfur dioxide emissions from power plants and other fuel burning equipment.
R 336.1601 to R 336.1651	Volatile organic compounds (VOCs) are a group of chemicals found in such things as paint solvents, degreasing materials, and gasoline. VOCs contribute to the formation of smog. The rules set VOC limits or work practice standards for existing equipment. The limits are based upon Reasonably Available Control Technology (RACT). RACT is required for all equipment listed in Rules 336.1601 through 336.1651.
R 336.1702	New equipment that emits VOCs is required to install the Best Available Control Technology (BACT). The technology is reviewed on a case-by-case basis. The VOC limits and/or work practice standards set for a particular piece of new equipment cannot be less restrictive than the Reasonably Available Control Technology limits for existing equipment outlined in Rules 336.1601 through 336.1651.
R 336.1801	Nitrogen oxide emission limits for larger boilers and stationary internal combustion engines are listed.

STATE AIR REGULATIONS

State Rule	Description of State Air Regulations
R 336.1901	Prohibits the emission of an air contaminant in quantities that cause injurious effects to human health and welfare, or prevent the comfortable enjoyment of life and property. As an example, a violation may be cited if excessive amounts of odor emissions were found to be preventing residents from enjoying outdoor activities.
R 336.1910	Air pollution control equipment must be installed, maintained, and operated properly.
R 336.1911	When requested by the Department, a facility must develop and submit a malfunction abatement plan (MAP). This plan is to prevent, detect, and correct malfunctions and equipment failures.
R 336.1912	A facility is required to notify the Department if a condition arises which causes emissions that exceed the allowable emission rate in a rule and/or permit.
R 336.2001 to R 336.2060	Allow the Department to request that a facility test its emissions and to approve the protocol used for these tests.
R 336.2801 to R 336.2804 Prevention of Significant Deterioration (PSD) Regulations Best Available Control Technology (BACT)	<p>The PSD rules allow the installation and operation of large, new sources and the modification of existing large sources in areas that are meeting the National Ambient Air Quality Standards (NAAQS). The regulations define what is considered a large or significant source, or modification.</p> <p>In order to assure that the area will continue to meet the NAAQS, the permit applicant must demonstrate that it is installing the BACT. By law, BACT must consider the economic, environmental, and energy impacts of each installation on a case-by-case basis. As a result, BACT can be different for similar facilities.</p> <p>In its permit application, the applicant identifies all air pollution control options available, the feasibility of these options, the effectiveness of each option, and why the option proposed represents BACT. As part of its evaluation, the Air Quality Division verifies the applicant's determination and reviews BACT determinations made for similar facilities in Michigan and throughout the nation.</p>
R 336.2901 to R 336.2903 and R 336.2908	<p>Applies to new "major stationary sources" and "major modifications" as defined in R 336.2901. These rules contain the permitting requirements for sources located in nonattainment areas that have the potential to emit large amounts of air pollutants. To help the area meet the NAAQS, the applicant must install equipment that achieves the Lowest Achievable Emission Rate (LAER). LAER is the lowest emission rate required by a federal rule, state rule, or by a previously issued construction permit. The applicant must also provide emission offsets, which means the applicant must remove more pollutants from the air than the proposed equipment will emit. This can be done by reducing emissions at other existing facilities.</p> <p>As part of its evaluation, the AQD verifies that no other similar equipment throughout the nation is required to meet a lower emission rate and verifies that proposed emission offsets are permanent and enforceable.</p>

FEDERAL AIR REGULATIONS

Citation	Description of Federal Air Regulations or Requirements
Section 109 of the Clean Air Act – National Ambient Air Quality Standards (NAAQS)	The United States Environmental Protection Agency has set maximum permissible levels for seven pollutants. These NAAQS are designed to protect the public health of everyone, including the most susceptible individuals, children, the elderly, and those with chronic respiratory ailments. The seven pollutants, called the criteria pollutants, are carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter less than 10 microns (PM10), particulate matter less than 2.5 microns (PM2.5), and sulfur dioxide. Portions of Michigan are currently non-attainment for either ozone or PM2.5. Further, in Michigan, State Rules 336.1225 to 336.1232 are used to ensure the public health is protected from other compounds.

FEDERAL AIR REGULATIONS

Citation	Description of Federal Air Regulations or Requirements
40 CFR 51 Appendix S Emission Offset Interpretive Ruling	Appendix S applies during the interim period between nonattainment designation and EPA approval of a SIP that satisfies nonattainment requirements specified in Part D of the Clean Air Act. Appendix S would apply in nonattainment areas where either no nonattainment permit rules apply or where the existing state rules are less stringent than Appendix S.
40 CFR 52.21 – Prevention of Significant Deterioration (PSD) Regulations Best Available Control Technology (BACT)	<p>The PSD regulations allow the installation and operation of large, new sources and the modification of existing large sources in areas that are meeting the NAAQS. The regulations define what is considered a large or significant source, or modification.</p> <p>In order to assure that the area will continue to meet the NAAQS, the permit applicant must demonstrate that it is installing BACT. By law, BACT must consider the economic, environmental, and energy impacts of each installation on a case-by-case basis. As a result, BACT can be different for similar facilities.</p> <p>In its permit application, the applicant identifies all air pollution control options available, the feasibility of these options, the effectiveness of each option, and why the option proposed represents BACT. As part of its evaluation, the Air Quality Division verifies the applicant's determination and reviews BACT determinations made for similar facilities in Michigan and throughout the nation.</p>
40 CFR 60 – New Source Performance Standards (NSPS)	The United States Environmental Protection Agency has set national standards for specific sources of pollutants. These New Source Performance Standards (NSPS) apply to new or modified equipment in a particular industrial category. These NSPS set emission limits or work practice standards for over 60 categories of sources.
40 CFR 63— National Emissions Standards for Hazardous Air Pollutants (NESHAP)	The United States Environmental Protection Agency has set national standards for specific sources of pollutants. The National Emissions Standards for Hazardous Air Pollutants (NESHAP) (a.k.a. Maximum Achievable Control Technology (MACT) standards) apply to new or modified equipment in a particular industrial category. These NESHAPs set emission limits or work practice standards for over 100 categories of sources.
Section 112 of the Clean Air Act Maximum Achievable Control Technology (MACT) Section 112g	<p>In the Clean Air Act, Congress listed 189 compounds as Hazardous Air Pollutants (HAPS). For facilities which emit, or could emit, HAPS above a certain level, one of the following two requirements must be met:</p> <ol style="list-style-type: none"> 1) The United States Environmental Protection Agency has established standards for specific types of sources. These Maximum Achievable Control Technology (MACT) standards are based upon the best-demonstrated control technology or practices found in similar sources. 2) For sources where a MACT standard has not been established, the level of control technology required is determined on a case-by-case basis.

Notes: An "Air Use Permit," sometimes called a "Permit to Install," provides permission to emit air contaminants up to certain specified levels. These levels are set by state and federal law, and are set to protect health and welfare. By staying within the levels set by the permit, a facility is operating lawfully, and public health and air quality are protected.

The Air Quality Division does not have the authority to regulate noise, local zoning, property values, off-site truck traffic, or lighting.

These tables list the most frequently applied state and federal regulations. Not all regulations listed may be applicable in each case. Please refer to the draft permit conditions provided to determine which regulations apply.

Extruded Metals, Inc.

RESPONSE TO COMMENTS DOCUMENT

October 20, 2011

**PERMIT No. 16-11
And
PROPOSED CONSENT ORDER**



Rick Snyder, Governor

**Air Quality Division
Michigan Department of Environmental Quality**

INTERNET: <http://www.michigan.gov/air>

G. Vinson Hellwig, Chief
Air Quality Division
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I. PUBLIC PARTICIPATION PROCESS

Permit to Install application No. 16-11 and the proposed consent order are for the brass processing and extrusion processes for Extruded Metals, Inc., located at 302 Ashfield Street, Belding, Michigan. The public participation process involved providing information for public review including a fact sheet, proposed permit terms and conditions, a proposed consent order, a public comment period, an informational meeting, a public hearing, and the receipt of written and verbal public comments on staff's analysis of the application, the proposed permit and the proposed consent order.

On August 29, 2011, copies of the Notice of Air Pollution Comment Period and Public Hearing, the Fact Sheet, the draft terms and conditions, and the proposed consent order were placed on the Department of Environmental Quality (DEQ or Department), Air Quality Division (AQD) Home Page (<http://www.michigan.gov/air>). Also on that date, the AQD mailed and emailed 52 letters to persons who had previously expressed interest via letter and had provided a complete address. In addition, a notice announcing the Public Comment Period, Public Informational Meeting, and Public Hearing was placed in the *The Buzz* and *The Daily News*. The notice provided pertinent information regarding the proposed action; the locations of available information; a telephone number to request additional information; the date, time, and location of the Public Informational Meeting and Public Hearing; the closing date of the Public Comment Period; and the address where written comments were being received.

The Informational Meeting was held on October 10, 2011, at the Belding Area Schools Administration Building, 1975 Orchard Street, Belding, Michigan. This location was selected due to its proximity to the facility and the size of the room. Approximately 35 people attended the Informational Meeting. A panel of representatives from the AQD was available to answer questions regarding the proposed permit, the proposed consent order and the remediation activities. The meeting began at 6:00 PM and concluded at approximately 7:15 PM.

The Public Hearing was held on October 10, 2011, at the Belding Area Schools Administration Building, 1975 Orchard Street, Belding, Michigan. The hearing began at 7:30 PM with Mr. Craig Fitzner as the Hearings Officer and Mr. G. Vinson Hellwig as the decision maker. Only comments on the proposed permit action and proposed consent order were received. In addition, staff of the AQD was available outside the room to answer any questions. Approximately 35 people were in attendance at the Public Hearing with two people providing oral comments. The Public Hearing concluded at 7:45 PM.

No written comments were received during the Public Comment Period or at the hearing.

The remainder of this document is a listing of the significant comments received regarding the proposed permit and proposed consent order, and the Department's response. The first section discusses the comments received that resulted in changes to the final permit terms and conditions and the basis for each change. The last section discusses the Department's response to all other significant comments that did not result in changes to the final permit or the consent order.

**II. SUMMARY OF COMMENTS RESULTING IN CHANGES TO THE PERMIT OR
CONSENT ORDER**

No changes were made to the permit based on comments received.

III. SUMMARY OF SIGNIFICANT COMMENTS

Comment

Two comments were received stating that monitoring once every six days is not enough. More frequent monitoring is desired.

AQD Response

The AQD conducts its air monitoring operations following those policies laid out by the US Environmental Protection Agency (EPA). For lead, the EPA requires that monitoring be conducted continuously for 24 hours, once every six days, at a site deemed representative of the expected maximum downwind concentration.

Computer modeling shows that the AQD monitor located east of the facility on Merrick Street is situated where the current maximum concentration is predicted to occur. AQD also operates a second lead monitor in Belding, located near the intersection of Reed and York Streets. While the primary purpose of this monitor is to determine how lead concentrations will vary with downwind distance once the stacks have been raised, given that it is located to the north-northeast of the facility, this monitor will also provide information on how ambient lead levels vary with wind direction.

Both the Merrick Street and the Reed/York Street monitors adhere to EPA's 1:6 day operational schedule. Since AQD will continue to monitor in Belding until we have at least three years of data demonstrating attainment with the National Ambient Air Quality Standard, we feel there is little opportunity for Extruded Metals to continually cloak their impact by curtailing their emissions on those days when AQD is monitoring. That said, if AQD suspects that such a strategy is being attempted, we will periodically carry out monitoring on additional days.

Comment

Two comments were received regarding raising the chip dryer stacks up to 122 feet. This will not reduce the lead emissions from the facility and will only spread the lead emissions over more people.

AQD Response

Raising the stacks will provide for better dispersion of the lead from the facility which will lower the impacts at any given point down wind from the facility. However, the commentors are correct that raising the stacks will not reduce the lead emissions. Extruded Metals, Inc. has updated their control on the west chip dryer so that the lead emissions are less than the permitted limit. Extruded Metals will also update the control on the east chip dryer prior to its restart so that the control is equivalent to or better than the control on the west chip dryer. These modifications, not the raising of the stacks, will lower the lead emissions to those levels that were previously permitted.

Comment

Two comments were received regarding the emissions of lead from the chip dryers. If the chip dryers are the main source of lead emissions, would it be possible to have Extruded Metals, Inc. dry the chips at an off site facility that isn't located in a residential area?

AQD Response

The AQD cannot require a facility to move their operations if it has been demonstrated that the operations are in compliance with state and federal requirements.

Comment

One comment was received regarding the proposed consent order. The comment is in regards to the language in the consent order that states that there are "alleged emission violations". When there are facts that say the company exceeded their emission limits, why does the consent order state there are "alleged" violations? The AQD needs to do what they can to make sure these violations don't occur again, short of shutting down the company.

AQD Response

Condition No. 6 in the proposed Consent Order states the following:

"The Company and the MDEQ agree that the signing of this Consent Order is for settlement purposes only and does not constitute an admission by the Company that the law has been violated".

This condition is standard in all AQD Consent Orders. Therefore, we refer to violations as "alleged" violations as this is an administrative settlement that does not require that the Company admit their guilt, or the need for the MDEQ to prove a violation in a court of law. Rather, both parties agree to resolve the "alleged" violations in a manner stated in the proposed Consent Order. Out of court administrative settlements are generally the preferred route to resolve violations by both parties.

As to what the AQD has done assure that these violations don't occur again, the consent order includes a provision for stipulated penalties as a deterrent.

Prepared by: Jeff Rathbun & Mike Kovalchick

NOTICE of AIR POLLUTION COMMENT PERIOD and PUBLIC HEARING

The Michigan Department of Environmental Quality (MDEQ) is holding a public comment period from August 29, 2011, until October 10, 2011, and an informational session and public hearing also on October 10, 2011, on Extruded Metals, Inc. proposed Draft Consent Order and the proposed Permit to Install (PTI) that was submitted to demonstrate compliance with the National Ambient Air Quality Standard for lead from the operation of the brass processing and extrusion processes. The facility is located at 302 Ashfield Street, Belding, Michigan. This action is to resolve the alleged violations of the Clean Air Act as well as address the PTI. The public comment period and hearing are to allow all interested parties the opportunity to comment on the Department's proposed Draft Consent Order and proposed conditional approval of the PTI. It has been preliminarily determined that the modification of the brass processing and extrusion processes will not violate any of the Department's rules nor the National Ambient Air Quality Standards.

Copies of the Department staff's analysis and proposed permit conditions are available for inspection at the following locations, or you may request a copy be mailed to you by calling 517-335-4607. Please reference Permit to Install Application Number 16-11.

AIR QUALITY DIVISION (AQD) Internet Home Page - <http://www.michigan.gov/air>

GRAND RAPIDS: MDEQ, AQD, State Office Building, 6th Floor, Unit 10, 350 Ottawa Avenue NW
(Phone: 616-356-0266)

LANSING: MDEQ, AQD, Constitution Hall, 3rd Floor, North Tower, 525 West Allegan Street,
(Phone: 517-335-4607)

BELDING: City Hall, 120 South Pleasant Street (Phone: 616-794-1900)

IONIA: Ionia County Main Courthouse Building, 1st Floor, 100 West Main Street (Phone: 616-527-5322)

The public is encouraged to present written views on the entry of the Draft Consent Order and the proposed permit action. Written comments for the Draft Consent Order should be sent to Mr. Mike Kovalchick, MDEQ, AQD, P.O. Box 30260, Lansing, Michigan, 48909-7760. Written comments for the PTI should be sent to Ms. Mary Ann Dolehanty, Permit Section Supervisor, MDEQ, AQD, P.O. Box 30260, Lansing, Michigan, 48909-7760. Comments related to the PTI may also be submitted from the webpage <http://www.deq.state.mi.us/aps/cwvwp.shtml> (click on "Submit Comment" under the Extruded Metals, Inc., Permit to Install No. 16-11 listing). All statements received by October 10, 2011, will be considered by the decision-maker prior to final action.

On October 10, 2011, an informational session and public hearing will be held. The informational session will be held from 6:00 p.m. until 7:30 p.m. at the Belding Area Schools Administration Building, 1975 Orchard Street, Belding, Michigan. Staff will provide a brief introduction regarding the proposed project and will be available to answer questions. The public hearing will start at 7:30 p.m. also at the Belding Area Schools Administration Building, 1975 Orchard Street, Belding, Michigan. The sole purpose of the public hearing will be to take formal testimony on the record. During testimony, questions will not be answered; however, staff will be available to answer questions outside the hearing room.

Individuals needing accommodations for effective participation at the hearing should contact Ms. Cari DeBruler at 517-335-4607 one week in advance to request mobility, visual, hearing, or other assistance.

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

Mary Ann Dolehanty, Permit Section Supervisor



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



DAN WYANT
DIRECTOR

August 29, 2011

Dear Interested Party:

This letter is in reference to a proposed draft consent order and proposed Permit to Install (PTI) application submitted by Extruded Metals, Inc. to demonstrate compliance with the National Ambient Air Quality Standard for lead from the operation of the brass processing and extrusion processes which are located at 302 Ashfield Street, Belding, Michigan. The Permit to Install application is identified as No. 16-11.

The Michigan Department of Environmental Quality (MDEQ) has announced a public comment period on the proposed draft consent order and draft permit conditions, as required by state and federal regulations. The public comment period is to solicit written comments prior to making a final decision on the permit application and draft consent order. Written comments received by October 10, 2011, will be considered in the final action. Please mail comments regarding the draft consent order to Mr. Mike Kovalchick, Air Quality Division (AQD), P.O. Box 30260, Lansing, Michigan, 48909-7760. Please mail comments regarding the PTI to Ms. Mary Ann Dolehanty at the address above, or from the webpage <http://www.deq.state.mi.us/aps/cwerp.shtml> (click on "Submit Comment" under the Extruded Metals, Inc., Permit to Install No. 16-11 listing).

On October 10, 2011, an informational session and public hearing have been scheduled at the Belding Area Schools Administration Building, 1975 Orchard Street, Belding, Michigan. The informational session will be held from 6:00 p.m. until 7:30 p.m., at which time staff will provide a brief introduction regarding the proposed actions and will be available to answer questions. The public hearing will follow at 7:30 p.m. The sole purpose of the hearing will be to take formal testimony on the record. During testimony, questions will not be answered; however, staff will be available to answer questions outside the hearing room.

After resolving any issues raised during the public comment period and the hearing, a final decision will be made on the permit application and draft consent order.

The "Notice of Air Pollution Comment Period and Public Hearing," the "Fact Sheet," the draft consent order, and the draft permit conditions regarding our analysis of the proposed actions are available at <http://www.deq.state.mi.us/aps/cwerp.shtml> or you may contact me for printed copies.

If you have any questions, please feel free to contact me.

Sincerely,

Jeffrey Rathbun, Senior Environmental Engineer
Permit Section
Air Quality Division
517-241-8072

cc: Mayor Roger Wills, City of Belding
Mr. Randall DeBruine, Belding City Manager
Ms. Tonda Rich, Ionia County Clerk
Ms. Pamela Blakley, U.S. Environmental Protection Agency, Region 5
Mr. Constantine Blathras, U.S. Environmental Protection Agency, Region 5
Mr. Brad Wurfel, MDEQ
Ms. Heidi Hollenbach, MDEQ

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Appendix 6 Modeling

A.6. Source parameters

MUELLER INDUSTRIES

Source Input Data

(Impacts based on AERMOD version 11103 using 2005-2009 Grand Rapids surface meteorology data)

(8/1/11)

	INPUT PARAMETERS										
POINT SOURCES	Stack Type	Lead (maximum) Emission Rate		Stack Height		Exit Temperature		Exit Flow/Velocity		Stack Diameter	
		(lb/hr)	(g/s)	(feet)	(meters)	(Deg F)	(K)	(ACFM)	(m/s)	(feet)	(meters)
WESTDRY	Point	0.300	0.0378	122.0	37.19	180.0	355.4	5,499	8.88	2.00	0.61
EASTDRY	Point	0.200	0.0252	122.0	37.19	180.0	355.4	5,499	8.88	2.00	0.61
WESTBH	Point	0.010	0.0013	40.0	12.19	80.0	299.8	59,673	15.52	4.99	1.52
EASTBH	Point	0.020	0.0025	35.7	10.88	80.0	299.8	59,991	22.35	4.17	1.27

Appendix 7

Completeness Checklist

- A.7. Components of Plan Submissions required by 40 CFR Part 51, Appendix V
 - A.7.1. Administrative materials
 - A.7.2. Technical support

A.7. Components of Plan Submissions required by 40 CFR Part 51, Appendix V

40 CFR part 51, Section 103 requires that, before plans from states can be considered, they are submitted in a specified manner and that it conforms to the requirements of Appendix V. Although many components of Appendix V have been previously addressed in this plan, and will be referenced accordingly, Sections 14 and 15 will refer to those items already addressed, and/or provide additional details.

A.7.1 Administrative Materials (as required by 40 CFR 51, Appendix V.2.1)

A.7.1.1 Formal letter of submittal (Appendix V.2.1(a))

A formal letter from a designee of the Governor requesting approval of the SIP will be included with the final submittal.

A.7.1.2 Evidence the State has adopted the plan, permit, order, etc. (Appendix V.2.1(b))

The MDEQ has issued two documents in order to address NAAQS nonattainment. The federally enforceable air use permit (PTI #16-11) was issued on October 20, 2011. It was later given a minor revision and reissued on March 15, 2012. In addition, the federally enforceable consent order (AQD #9-2011) was issued on December 1, 2011.

A.7.1.3 Evidence Michigan has legal authority to implement plan (Appendix V.2.1(c))

Authority to implement this plan is granted under various parts of NREPA.

A.7.1.4 Copy of actual document submitted for approval into plan (Appendix V.2.1(d))

A copy of both PTI #16-11 and consent order AQD #9-2011 are attached as Appendix A.4 and A.5 respectively.

A.7.1.5 Evidence the state has followed procedural requirements of Michigan law (Appendix V.2.1(e))

State law requires the MDEQ to provide notice of SIPs, and in the case of Mueller Industries, the MDEQ chose to hold mold public meetings and hearings. All pertinent documents are included in Appendix A.5, or will be upon completion of public participation process.

A.7.1.6 Evidence that public notice of change was given (Appendix V.2.1(f))

Appendix A.5 contains documents that were created as a result of the public participation process executed during the creation of PTI No. 16-11, including a "Notice of Air Pollution Comment Period and Public Hearing" for both the proposed PTI No. 16-11 and Draft Consent Order 9-2011. Additional documents will be added regarding the SIP public participation process once it's completed.

A.7.1.7 Certification that public hearings were held in accordance with State Law (Appendix V.2.1(g))

Appendix A.5 contains documents announcing the time designated for public hearing. When the public hearing is completed for this SIP, those documents will also be included.

A.7.1.8 Compilation of public comments (Appendix V.2.1(h))

Public comments were received for PTI No. 16-11 and Consent Order 9-2011. The comments included statements about the sampling schedule, the dryer stacks, the chip dryer emissions and terminology used in the consent order. A document entitled "Extruded Metals, Inc. - Response to Comments" dated October 20, 2011, is included in Appendix A.5.

Comments on this SIP will be included here after the appropriate public comment period has expired.

A.7.2 Technical Support (as required by 40 CFR 51, Appendix V.2.2)

A.7.2.1 Identification of all pollutants affected by the plan (Appendix V.2.2(a))

Lead is the only air pollutant this submittal addresses.

A.7.2.2 Identification of locations affected by the plan (Appendix V.2.2(b))

The lead nonattainment area is located in the village of Belding, in the county of Ionia in the state of Michigan. Details are covered in Section 2.0.

A.7.2.3 Quantifications of changes in emissions from plan (Appendix V.2.2(c))

Quantification of the changes in emissions is not possible from the data we have, but an estimate could be derived from stack testing data obtained in September 2009. At that time, the West chip dryer was found to be emitting 0.35 lbs/hr, an exceedance of 0.05 lbs/hr over their allowed/permitted limit. As a result of this exceedance, a permit to install and consent order were issued that required improvements be made to the control devices. These changes appear to have led to a decrease in emissions. An October 2010 stack test indicates the same West chip dryer emission unit had reduced its emissions to 0.21 lbs/hr, well below the 0.3 lb/hr limits.

In addition, the East chip dryer was shutdown in this timeframe. The East chip dryer was not stack tested before shutdown, but is required to enhance the control system, raise the stack and perform a stack test before it can be restarted.

Other changes were made that do not lead to quantifiable emission changes, but are likely to improve annual emissions. These details are throughout this document and include maintenance, monitoring, soil remediation, etc.

A.7.2.4 States demonstration that standards will be protected (Appendix V.2.2(d))

This document was created to show that changes made by the facility, after review by the MDEQ, are already effective in meeting the NAAQS rolling 3 month average lead standard. This has been accomplished without negatively impacting any other standard or regulatory benchmark.

A.7.2.5 Modeling (Appendix V.2.2(e))

A discussion of modeling input, output, meteorological data, model used, assumptions, etc. are contained in Section 11.11 and Appendix A.6.

A.7.2.6 Evidence emission limits are based on reduction technology (Appendix V.2.2(f))

A discussion of rationale for emission limitations and control devices is contained with Appendix A.3 Permit engineer notes discuss these limits.

A.7.2.7 Evidence the plan contents ensure emission levels (Appendix V.2.2(g))

A discussion of rationale for work practice standards, recordkeeping, etc. is contained with Appendix A.3 Permit engineer notes discuss the standards, need for recordkeeping, etc.

A.7.2.8 Compliance strategies (Appendix V.2.2(h))

Compliance strategies are addressed in PTI No. 16-11, with discussion included in the permit engineer notes, both of which are included in Appendix A.3

A.7.2.9. Special economic and technological justifications (Appendix V.2.2(i))

Discussion of alternative control strategies and other scenarios are part of the permit engineer notes, and are included in Appendix A.3